

MAY 15 1922

# Railway Age

FIRST HALF OF 1922—No. 19

NEW YORK—MAY 13, 1922—CHICAGO

SIXTY-SEVENTH YEAR

Published weekly by Simmons-Boardman Pub. Co., Woolworth Bldg., New York, N. Y. Subscription Price U. S., Canada and Mexico, \$6.00; foreign countries (excepting daily editions), \$8.00; single copies, 25c. Entered as second-class matter, January 30, 1918, at the post office at New York, N. Y., under the act of March 3, 1879.



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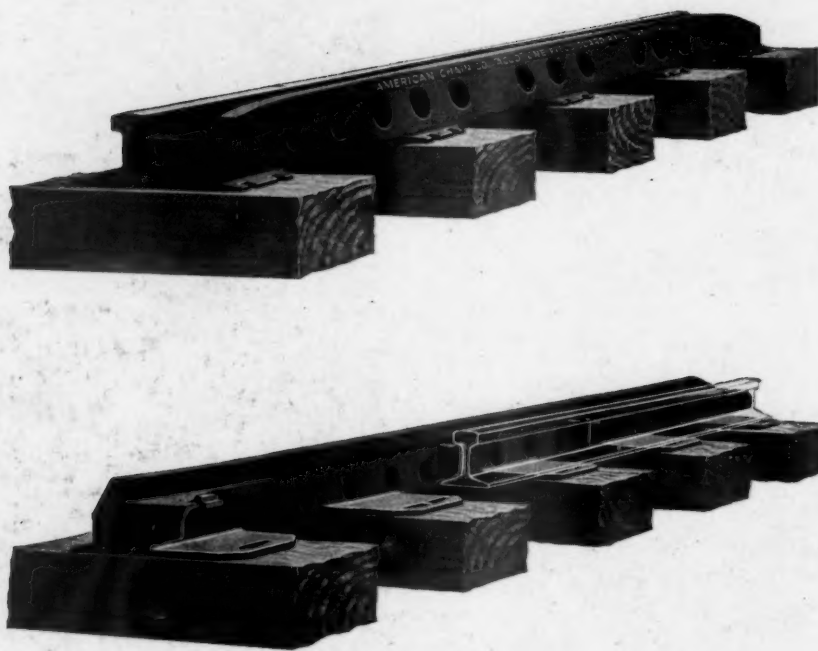
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# EDITORIAL

## Railway Age

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In spite of the extensive accommodations for employees provided by some roads at Y. M. C. A.'s and company bunk-

### Sleeping in Cabooses

houses, there are still entirely too many terminals where train and engine employees are forced to sleep in cabooses on the away-from-home lay-over. This situation is far from satisfactory and merits the attention of all railroad officers under whom it exists. With the advent of summer the caboose becomes even less desirable as a place to sleep. Caboose tracks are not as a rule located in the coolest spot available. The heat, flies (and perhaps even less desirable visitors from the insect world) and constant switching make for a minimum amount of rest away from home for train and engine men. Undesirable as a caboose is as a place of repose, however, it is only slightly worse than a noisy, dirty bunk-house. Bunk-houses should, without doubt, be provided wherever crews are required to lay-over, but they should be located where there is a minimum of noise and where the sun's rays may not beat down upon them with all their summer fury. Furthermore it costs no more to operate a clean sleeping place than a vermin-infested one. Some roads—we could mention several—provide their train and engine men with clean beds in private rooms and ample bathing facilities at a nominal charge. The *Railway Age* is of the opinion that if this practice were general the demands of the men for a quick return to the home terminal would be less insistent.

The installation of automatic block signals is, in many cases, the most economical way of increasing the track capacity of

### Signaling Single Tracks

important single track lines. Comprehensive data have been compiled to show the economies produced by certain installations. A certain road is now preparing to make a single track signal installation at a cost of not over \$3,400 a mile that, according to careful calculations based on actual results of the installation of automatics under similar conditions, should increase the average speed of freight trains over the division by 25 per cent, thereby producing a saving that will pay for the signal installation in a few years. On another road it is estimated that the construction of a second track over a certain division will cost approximately \$3,000,000 as compared with \$725,000 for a signal installation, which latter expenditure is calculated to show a saving of 18 per cent on the investment. However, "the proof of the pudding is in the eating," which is evidenced by the recent action of the Northern Pacific in authorizing the installation of signals on 151 miles of single track, which will practically complete the signaling of the main line of that road from the Great Lakes to the Pacific Coast. The Great Northern has also let contracts for 165 miles of automatic signaling on single track in Montana and Washington. The reconstruction program of the Missouri, Kansas & Texas has included some 251 miles of single track signaling with satisfactory results and other installations are proposed. Operating and engineering officers not familiar with the possibilities of signaling are sometimes inclined to consider double tracking as the only solution of the problem of increasing track capacity.

However, before plans are completed the railroads cannot afford to overlook the possible economies derived from signaling.

Sleet storms have been the cause of serious delays to trains and occasionally during the past season have halted the transaction of general railroad business on the

### Railroad Pole Lines and Sleet Storms

northern roads because of the damage caused to pole lines. Although it may not be economical to build pole lines to withstand ice loads as exceptional as three pounds per lineal foot of wire, certain roads have taken precautions that have limited the damage so that communication has not been entirely cut off even during the heaviest sleet storms in history. The standard for new construction on one such road requires the use of 53 poles per mile as compared with 41 poles ordinarily considered as sufficient. Further, every sixth pole is side-guyed and special-fixture poles are located at intervals of a half-mile. Another road, which had 200 miles of signal department pole line loaded with heavy sleet recently, did not have a single pole broken by the load and attributed the strength of the line to the fact that not only were 52 poles used to the mile but that the line was also well guyed at frequent intervals. In the same state another road lost 370 poles in 190 miles of signal line. One fact noted concerning the line breaks, was that the iron wire broke at the insulators while the copper wire broke between spans. It was also noted that fewer breaks occurred at the insulators if smaller wire was used for tying. Railroads are vitally interested in the continuity of the service of their communication and signal pole lines and when estimating for new lines or renewals, they cannot afford to ignore the lessons learned by others.

The expression "Waiting for Someone to Die" is not a particularly pleasant one, yet it is often heard among railway

### "Waiting for Someone to Die"

men in reference to the possibilities of promotion. It is not, however, with the advancement of individuals that this expression has been most strongly impressed upon us but rather with the advancement of railroading itself. Now and then there are railway officers who, because of their beliefs, prejudices, misinformation, personal animosities and other reasons, are blocking the adoption of something of proved benefit—either an article or a method or a plan. Many of us can recall instances where certain methods were adopted and certain changes were made which had long been attempted by junior officers, but these were not made until after "someone had died." We recall a recent talk with a manufacturer of a product used by many roads to advantage, in which he stated that, although the department head and the latter's subordinates on a certain railroad desired to install it, he could not sell to that road. "We," he stated, meaning the railway officers concerned and himself, "have agreed that it is simply a matter of waiting until So-and-So dies." Speaking exactly it is not truthfully a case of waiting until someone dies, the man or men may resign or they may be trans-

ferred or even promoted—many are—to where they are no longer actively in charge of the details and where they see only the results. Some have learned that their pet beliefs have been dropped since they relinquished the details, yet can find no criticism with the results. Others have this experience yet to come.

The proceedings of the American Society of Civil Engineers for April contain discussions by a large number of bridge

#### **Specifications for Steel Bridges**

engineers and others on the specifications for steel railway bridges submitted as a progress report by a special committee of that association. In general, the tone of these discussions is one of criticism of the committee for presenting what is to all purposes a duplication of the specifications adopted by the American Railway Engineering Association in 1920. The general consensus of opinion corresponds to that expressed in these columns sometime ago, namely, that the adoption of these specifications by the A. S. C. E. would serve only to introduce a confusing duplication. It is clear from these discussions that there is little likelihood of the adoption of the specification in its present form by the association. However, a number of constructive suggestions are offered pointing to work which can be done with profit by the special committee of the A. S. C. E. on steel bridges. Attention is called to the fact that the A. R. E. A. specification is in reality a detailed set of rules covering almost every contingency that can possibly arise in the design of the usual types of railway bridges for spans under 300 ft. Therefore, rather than duplicate this work, it is suggested that the special committee formulate a set of specifications covering general considerations or principles relating to the design of steel bridges which would be applicable to all bridge construction. There would seem to be considerable merit in this suggestion as it offers a legitimate field for the work of the special committee which would in no way duplicate the detailed specifications of the A. R. E. A.

Railroad men are coming to appreciate more and more the power of an aroused public sentiment and the necessity of making that sentiment a friendly one.

#### **Mechanical Department and Public Opinion?**

Somewhat limited attempts to broadcast the magnitude of railroad problems and needs have borne rich fruit in recent months, and the good work should be extended and intensified in all departments. Owing to the lack of any direct contact with shippers or the traveling public it is not commonly supposed that the mechanical department can influence public opinion, but let us see if this supposition is based on fact. In the first place the mechanical department employees, with their families and friends, form no inconsiderable portion of the public, and the opinions of all these people regarding the railroads are largely determined by the treatment accorded them as employees through their foremen. Here is a fine opportunity to start educational work and some railroads have already taken advantage of it. For example, Elisha Lee, vice-president of the Pennsylvania, recently talked before the Shop Foremen's Club at Pittsburgh, explaining (1) the vital relation between prosperous railroads and a prosperous country; (2) the functions and equal importance of railroad investors, workers and managements; (3) the economic necessity for reduced railway rates and wages, and (4) the important role that foremen play in representing the management, treating their men always with the most scrupulous fairness, and explaining personally as far as possible the reasons for policies which appear objectionable. In addition to this work the mechanical department can help

make friends with the general public by improving the quality and increasing the quantity of its work. If enough cars, properly maintained as to wheels, springs and upholstery, are available it is evident that each passenger will have a clean, comfortable seat. If locomotives are kept in good repair, with drawbars of the right length to eliminate unnecessary slack, and brake rigging properly maintained throughout, operation will be smooth, resulting in fewer shocks to equipment and passengers' nerves. If enough locomotives are available none need be overloaded, with resultant delayed shipments and rapid deterioration of motive power. These are but a few of the ways in which the mechanical department can help bring about a favorable and friendly public sentiment towards the railroads.

There is no doubt that advantage should be taken of the present opportunity to equip shops and enginehouses as

#### **How Low Should Machine Tool Prices Go?**

completely as possible with new machinery and tools needed for efficient operation. That certain of the railroads are working along this line is evident from the growing number of requests for bids on machine tool lists recently issued. As a rule, the roads have been slow in accepting bids and definitely placing orders, and there is a general feeling that the delay may be caused by belief that machine tool prices have not yet reached rock bottom. In fact, in more than one case a road has definitely stated that it will not buy until prices are lower. There could be no justification for the railroads paying unnecessarily high prices for machine tools, or prices which were higher than those determined by a competitive market. On the other hand, certain standard makes of machines were not advanced in price during the war period proportionately to other products and what advances were made have now been offset by reductions until many present prices show little if any profit. Any attempt to take advantage of the extremity of manufacturers and force machine tool prices below a point representing a reasonable profit will be a boomerang and react to the disadvantage of the roads. Let us suppose that a railroad now in need of certain machines decides to hold out in the hope of further price reductions and is successful to the extent of saving a few hundred dollars after a wait of six months. Besides delivering what may be a severe blow to the relatively small machine tool manufacturer (who is incidentally a shipper), the railroad loses for a period of six months the increased efficiency which would have been possible by purchasing the machines in the first place. The total cost of this lost efficiency will undoubtedly equal, if not exceed, the saving in price. Moreover, the effective life of machine tools varies from 10 to 20 years and the entire first cost when spread over such a long period is relatively unimportant compared to the increased machine efficiency. In the long run more will probably be lost than gained by waiting for further reductions in the price of standard, high-grade machine tools.

The International Railway Congress at Rome began on April 18, and on another page of this issue is the first of a

#### **Reports on the Rome Congress**

series of articles on the proceedings of the Congress and European railway affairs generally. These articles are being written for the *Railway Age* by its editor Samuel O. Dunn, who attended the Congress at Rome as a delegate of the American Railway Association and who presented to the Congress a report on Cost of Service in Relation to Rates. From the report of the opening of the Congress, which is published elsewhere in this issue, it seems that the meeting was a very successful one and the proceedings and recom-



mentations can well be followed with interest by American railway men. We do not have to admit that our railways are inferior in order to benefit from European experience. Since the convention, Mr. Dunn has been traveling in Europe. His observations on this tour will likewise be published in issues following those which contain the reports on the activities of the Congress. The *Railway Age* is confident that its readers will find much of interest and value in these articles.

## Railroad Traffic and Earnings

STATISTICS of railroad earnings and traffic which are now available for the first quarter of 1922 tend to support the contention of railroad officers that what they needed was a reduction of wages and other expenses and more freight to move, rather than a reduction of rates. These statistics are attracting attention just now because the roads in March came closer to a 6 per cent return than they have in any month since the passage over two years ago of the Cummins-Esch law, which we are still solemnly assured in some quarters constituted a "guarantee" of 6 per cent, but those who notice the effect do not always give careful consideration to an analysis of the causes. As a matter of fact, the reason why the roads attained so near a 6 per cent return in March, as 5.83 was that they carried a large tonnage of coal in that month that would not have been moved until April had it not been for the prospective strike to begin on April 1, and that was offset by the reduction in coal traffic in April.

However, most classes of traffic other than coal have recently been showing considerable gains as compared with last year, without any general reduction in rates, and expenses have been reduced both by the part-way reduction in wages made last July and by reductions in the prices of fuel, materials and supplies, so that the roads are making a much more satisfactory showing than they did last year. Important reductions have been made in the rates on livestock and agricultural products, but the number of carloads of livestock loaded thus far this year has shown a slight decrease as compared with last year, and the increase in the loading of grain and grain products accounts for less of the increase in the total traffic than other commodities on which there has been little or no reduction in rates.

It has been constantly claimed that reductions in rates would so stimulate traffic as to increase railroad revenues and in a recent issue of the *Farm Bureau Weekly News Letter* an attempt was made to attribute the increase in traffic already experienced this year to the reductions made in rates on agricultural products. But whatever has been the result of those reductions in rates, the effect has not been to increase earnings because for the first three months of this year total operating revenues were 4.8 per cent less than in the corresponding months of 1921, although the number of carloads of freight handled increased about 10 per cent, from 9,015,824 to 9,996,184.

The improvement in net railway operating income, which increased from \$27,574,407 to \$160,998,907 and represents an annual rate of return for the quarter of 4.51 per cent, was entirely due to the reduction in operating expenses of 16.6 per cent, which resulted both from such reductions as have been made in wages and in prices of materials necessary to railway operation and from the necessity for the most rigid economy.

An analysis of the increase in traffic up to April 1 this year as compared with last year shows that the loading of grain and grain products, on which rates were reduced from 10 to 17½ per cent about the first of the year, increased from 503,682 to 607,418 cars. There had also been an increase in 1921 over 1920 in spite of an increase in rates. The loading of livestock, however, was only 379,587 cars as

compared with 379,679 last year, in spite of a 20 per cent cut in rates made last summer. Coal loading was 2,173,291 cars as compared with 1,815,776 last year. The loading of forest products was 596,003 as compared with 594,140 last year. Merchandise l. c. l. loading was 2,608,377 cars this year as compared with 2,304,220 last year and miscellaneous freight amounted to 2,698,489 cars as compared with 2,593,535 last year. On the other hand, coke loading was less this year than last year, 96,375 cars as compared with 103,442, but it has recently been increasing, and ore loading was only 54,321 as compared with 92,911 last year, but has also been going up lately. Earnings reports for April will not be available for some time but the car loading reports show a considerable decrease as compared with March, due to the coal strike, which will, of course, be reflected in the revenues. As compared with last year, however, it is a noteworthy fact that increases in traffic other than coal have more than offset the reduction in coal loading.

At this writing the Interstate Commerce Commission has not yet announced its decision as the result of its investigation as to whether it may lawfully order further reductions in rates, and it is said that there is much difference of opinion among its members. In view of the improvement in traffic and in general business conditions that has already taken place, we believe the commission might well hold that no very general reductions in rates should be ordered until a longer time has been afforded to observe the effect of the present rates under an improved condition of general business, or until lower rates shall be warranted by further wage reductions. If the commission should find any considerable reduction in rates warranted under present conditions on the ground that it would tend to increase revenues, there would always be room for doubt as to whether the general increase in business which everyone is now looking for represented the result of lower rates or whether it would have come anyway.

## Buying Paint on Specification

SPECIFICATIONS for various kinds of paint have been highly developed in recent years and they have been adopted by many railroads as the most satisfactory basis for the purchase of paint. This practice has many apparent advantages. Paint specifications allow free competition among paint manufacturers. If the composition and properties can be definitely determined, specifications insure uniform quality and a paint that meets the requirements of the railroads. The object of the paint specification is to eliminate every variable except price and to reduce the problem of buying paint to its simplest terms.

There are strong arguments in favor of buying paint on specification, but it should be recognized that this method also has its disadvantages. The physical condition of the paint is as important as the chemical composition and satisfactory working properties are not always obtained when ingredients are mixed in the same proportions. The oils used in paint are complex organic products and are not of uniform quality. For this reason experienced paint makers use formulas merely as guides and modify the composition to obtain the combination of properties desirable in a paint. There is always a question whether the particular formula adopted for a paint specification is the best that can be prepared, for the foremost authorities do not always agree as to the relative merits of various mixtures of oils or even as to the most satisfactory pigment. Paint specifications restrict the manufacturer and take away from him the opportunity to use various ingredients, forcing him to make paint of a certain analysis rather than allowing him to apply the skill gained through long experience to prepare a paint of the composition which has been found to give most satisfactory

results. Paint made to a specification must be limited to materials that can be readily analyzed and this eliminates the use of blended oils which are the basis of some of the most successful paints.

In one respect paint specifications unquestionably are successful. They result in extremely low prices for the standard grades of paint. In fact, it is often difficult to understand how the paint makers can offer the products at the prices quoted. A short time ago bids were requested on several specification paints and an estimate was prepared showing the cost of making these paints with reasonably good material and reasonable care in manufacture at the prevailing prices for labor and material. To this was added overhead plus ten per cent to represent a fair selling price.

A comparison of the price thus determined with the lowest bids received is of interest. On one paint the cost was 28 cents and the lowest bid was 16 cents. On another the estimated cost was 11¼ cents and the lowest bid 6 cents. Still another, estimated to cost 22 cents, was offered at 11 cents. In other cases the estimated figures and the actual figures were more nearly in agreement. Some of these paints were offered to the railroads for less than the ingredients would have cost if bought in large quantities in the open market. Why did the manufacturer not sell his raw material and take a profit rather than expend labor on the manufacture of the paint to sell at a lower price? There are only two explanations. Either the paint did not contain the ingredients called for in the specification or the manufacturer was anxious to give the railroad something for nothing. Which is the more likely, that paint makers are philanthropists or that they are able to get by with paint that is not up to the standard the specification is intended to insure? There is considerable evidence which indicates that paint specifications do not prevent substitution of inferior goods. If this is the case what reason is there for having a specification for paint?

### Railway Age Not Represented at Foreign Trade Convention

**T**HE *Railway Age* did not have a representative at the Ninth National Foreign Trade Convention at Philadelphia this week. The decision not to report the meeting was made after a careful study of the program which revealed that no matters relating to railroad transportation or to the railway supply business were to be considered.

Those responsible for the preparation of the plans for this convention seem to have a very hazy idea of the great importance of the railways in foreign trade. They do not seem to realize that an American financed railway abroad is a constant market for American goods and that its successful working is a perpetual advertisement for American goods in general. They fail to consider that the greater part of our export tonnage moves a great many miles by rail. They apparently do not give heed to the fact that one of the most acceptable methods of restoring exchange to normal levels is by extending loans for railroad development abroad. Instead they ask the delegates to spend their time listening to addresses on the public's interest in foreign trade and reasons why we should have foreign trade. As if a large number of exporting manufacturers had to be "sold" on the importance of this feature of their work!

But the convention did not only completely ignore the problems of the railways and the railway supply business. It did more than that. It turned the floor over to their competitors! One of the principal speakers was one W. H. Stevenson, "president of the Lake Erie and Ohio River Canal Board of Pennsylvania"—whatever that is. Let us examine for a moment some of the statements of this man,

whose message was thought more important than anything which could have been said about the railways or the railway supply business.

We quote from an advance copy of his address, which is headed "Transportation Costs Must Be Lowered."

"The railroads thus being unable to adequately supply the cheap and prompt transportation from the interior to the coasts so requisite for the securing of our proper share of the foreign trade, to what other agency must we look? The one great and feasible means of relieving our transportation facilities is by properly improving our rivers and harbors and building necessary canals, a policy which France, Germany and other European war-burdened nations are steadily pursuing. Now it is possible to provide within the next five years a complete connected system of internal waterways covering the whole nation for the small expenditure of \$100,000,000 a year.

"Such a system would carry 500,000,000 tons of freight annually at a saving of at least \$350,000,000 in direct freight charges alone. But it would also save the people many billions of dollars, for it would keep our farms and factories busy and would supply their products much cheaper to all our people. The one great vital connecting link in this nation-wide system of waterways is the Lake Erie and Ohio River Canal. This will connect the Ohio River with Lake Erie."

This convention, which had no time to give to the discussion of the interest of the railways in export trade, did, however, have time to listen to the arguments of a man whose thesis was that railroad transportation was inadequate and not sufficiently cheap.

Someone may perhaps desire to call to our attention the fact that railway equipment manufacturers were represented in the program of the convention. That is true—C. M. Muchnic of the American Locomotive Company, and F. de St. Phalle of the Baldwin Locomotive Works were on the program, but to neither of these gentlemen was assigned a subject in any way related to the railway supply business as such. Moreover it is not our contention that a railway supply manufacturer or a railroad traffic man might not have profited from attending the convention. Quite the contrary. The consideration of credits and other financial matters relating to foreign trade was quite thorough and, it is probable, valuable. This does not vitiate our contention however, that in omitting a consideration of railway transportation and its allied industries the convention fell far short of the value which it might have attained.

It is the hope of the *Railway Age* that those in charge of preparing the program for the convention next year will not suffer from the inability to appreciate the railroad viewpoint and the bias in favor of inland waterways as have those who planned the Philadelphia convention.

### New Books

*Saward's Annual*, by Frederick W. Saward. 6 in. by 8 in. in size. Bound in cloth. 256 pages. Published by Saward's Journal, 15 Park Row, New York. Price \$2.50.

This book has a sub-title announcing it to be "A standard statistical review of the coal trade." The title page further says that the book embraces details relative to output, prices, freight and wage rates, transportation, exports, trade conditions, computing tables, and other details of importance to the coal man, wholesale and retail.

The book contains a wealth of information of considerably diversified character relative to coal production. It should be of value to railroad men and those interested in railroads because of the information it gives about shipments classified by months for 1921 and previous years on



various selected roads; about exports through the important ports; production in various districts; commercial conditions in various markets; prices and various other details of like character. The book, of course, has a special value at this time because of the strike. It suffers, somewhat, however, for lack of orderly and consistent arrangement, although there is a good index which partly overcomes this fault.

*E. H. Harriman. A Biography. By George Kennan. In two volumes, 6 in. by 9 in. in size. Illustrated, Bound in Cloth. Published by Houghton Mifflin Company, Boston and New York.*

E. H. Harriman was born in 1848. He began his business career as a messenger boy at a wage of \$5 a week in a Wall Street brokerage house. From messenger boy he became what was then termed a "pad-shover," then a clerk and eventually managing clerk. In 1870 he opened a brokerage office of his own. It was with this kind of a start that Mr. Harriman rose to a position where he became one of the leading and most remarkable figures in American railroad history. Not the least of the many characteristics which made him remarkable was that to his skill as a financier he added a clear insight into railroad operating and traffic conditions. That he should have been able to obtain this insight without ever having been engaged in actual railway operation emphasizes the capabilities of the brain with which he worked.

"Harriman's phenomenal success in the field of transportation is attributable," says Mr. Kennan in his book, "not only to his extraordinary intellectual ability, which would doubtless have made him distinguished in any field, but also to his intimate acquaintance with both practical railroading and finance. 'If I were asked what is the key to Harriman's success,' said one of the greatest bankers in New York ten or twelve years ago. 'I should say it is a fact that he is the only man I have ever known who is just as familiar with the physical as the financial side of his properties. Morgan is a great banker, but he knows nothing about the physical side of a railroad. Hill is a great traffic man and railroad builder, but he is a baby when he gets into Wall Street. Harriman knows both ends of the game and knows them well. He started in life as a floor trader and developed into a banker, and when he took hold of the railroad business he put aside the banking and financial end and spent long, hard and patient years in learning the traffic and operating side. Then he took the two and counter-balanced them. Now he is his own banker and his own traffic manager, and the combination is irresistible.'"

Mr. Kennan, in his book, *E. H. Harriman, a Biography*, presents a story of absorbing interest written in a most readable manner. It is a complete and well-rounded story. The author sketches Mr. Harriman's career as a railroad man, as a citizen, and as a loving father of his family. He discusses Mr. Harriman's connection as a director of the Illinois Central, his entrance later into the Union Pacific, his acquisition of the Southern Pacific, his rehabilitation of these lines; his fight with Hill over the control of the Northern Pacific and the developments of the Northern Securities Company; the Alton episode; the saving of the Erie from receivership, etc. Interesting chapters deal with the development of the Imperial Valley, the work of the Southern Pacific at the time of the San Francisco earthquake, the saving of the Imperial Valley through the control of the Colorado river, etc. An especially interesting phase is the plan advanced by Harriman for the control of a line across Manchuria and Siberia—a line around the world. On the other hand, Mr. Kennan also tells of the Boys' Club on the East Side of New York, in which club Mr. Harriman took a special interest; of the home at Arden in the Ramapo mountains and the family life there. There is a combined picture of the financier and the man and the story is well worked in and co-ordinated.

Mr. Harriman was the subject of much criticism and

censure. His work was not always understood and at times it was regarded with ill-will in many quarters. The analysis made by Mr. Kennan of Harriman's character explains the reasons for these things.

For instance, in the preface to the book, he says: "Mr. Harriman was temperamentally disinclined to engage in personal disputes and controversies. He did not like the newspaper notoriety that accompanies quarrels carried on publicly, and he often refrained from making replies to injurious charges, even when he had a perfect and convincing defense. Then, too, he regarded public controversy as a waste of time. The work in which he happened at the moment to be engaged seemed to him more important than anything else, and he would not allow himself to be diverted from it by harsh criticism of his methods, or even by unjustified attacks upon his character and personal integrity. . . . This unwillingness to engage in controversies, however, was often misinterpreted. Some people, who did not know him personally, thought that it indicated callous indifference to public opinion, while others regarded it as evidence that no convincing reply to damaging accusations could be made. Neither of these suppositions, however, had any foundation. In fact, Mr. Harriman was not indifferent to public opinion, nor did he ignore attacks because he was unable to meet them. He simply did not care to spend in controversy time that he could employ more profitably in work. When an intimate friend once said to him that he certainly would be misjudged if he did not defend himself with the weapons that lay in his hand, he replied: 'The people will always find out what's what in the end, and I can wait. I need all my time and energy to do things.'"

The suggestion must be advanced, however, that the book suffers in the respect that in his explanations of many of the things done and in his answers to the accusations made against Mr. Harriman, Mr. Kennan tends in many instances to go too far. He seems, that is to say, at times, if anything, too laudatory to make his story sound convincing in all its aspects. The reader is inclined to feel that there is too much of this vindication and that the author must have been governed by the underlying idea that "the king can do no wrong." Harriman unquestionably made mistakes and serious ones, but no acknowledgment of this fact will be found in either of the two volumes. Some of the vindications go a trifle too far in their statements concerning Mr. Harriman's accusers. In one case he speaks of the Interstate Commerce Commission as an "incompetent commission" which, to say the least, is hardly in good taste. His comments about the late Theodore Roosevelt and about Professor Ripley of Harvard are similarly stated in extreme terms. One would suggest in the latter connection that there are two sides to the matters referred to. The other side of the Roosevelt episode will be found, for example, in J. B. Bishop's "Theodore Roosevelt and His Time, Shown in His Own Letters," notably in chapter II of volume II dealing with the panic of 1907. What Mr. Kennan would term Professor Ripley's "accusations" will be found in Ripley's "Railroads: Finance and Organization."

Nevertheless, whether or not the story is too laudatory of Harriman or too caustic in the criticism of those who took issue with Harriman, the fact remains that Mr. Kennan's work does prove Harriman a great man and it does explain the reasons for the financier's remarkable career. The story of the driving power behind the man, of the will power that secured the accomplishment of the impossible, of the success secured in getting others to work for and with him, of the manner in which the man remained in harness until his death in 1909, of the human characteristics shown in his family life, etc., is well told. The book is a real contribution to the history of American railroad finance and operation and will be read with profit by anyone, whether interested in railroads or otherwise.

## Letters to the Editor

[The RAILWAY AGE welcomes letters from its readers and especially those containing constructive suggestions for improvements in the railway field. Short letters—about 250 words—are particularly appreciated. The editors do not hold themselves responsible for facts or opinions expressed.]

### "Locomotive Engineer" Is Challenged

CHICAGO

TO THE EDITOR:

I am a poor dub train dispatcher, seeking knowledge whereby I may better serve my employer.

I refer to the letter by "Locomotive Engineer" in your issue dated April 8. Will you kindly have "Locomotive Engineer" advise the railroad and division, and when, they ran the 75 trains each way daily over the 95-mile single track division? I would like to brush up a bit and possibly they could give me some pointers out that way; also would like to shake hands with those train dispatchers; that is, if they have any left.

TRAIN DISPATCHER.

### The Coal Strike and Publicity

KANSAS CITY, Mo.

TO THE EDITOR:

In your publication of April 29, in an article "The Coal Strike Situation Needs Some Publicity," I was interested in your statement that the operators should make their case, if they had one, and tell it to the public. Many efforts along this line, with a plain statement of facts, have been furnished to the daily press, but for reasons best known to them this has not been considered news and has had only scant, if any, publication. The public does not seem to realize the great importance of the present struggle or its ultimate effect on the industrial welfare of the country.

Briefly, coal and railroads were the only basic industries completely controlled by the government during the war. Five times during such control the wage scale contracts made between the miners and operators by collective bargaining were readjusted; and the amounts added to the cost of coal by such adjustments over and above the original contract have aggregated \$2,720,000,000 up to January 1, 1922. The last government award, in effect until April 1, 1922, will bring these war bonuses up to nearly three billion dollars.

The miners have refused to consider any readjustment back to a peace basis and have called a nation-wide strike in their effort to retain the war premiums. The operators are determined, in the interest of industrial welfare, to eliminate these war bonuses.

A fair adjustment of the present situation would be for the miners to accept the last contract made mutually by collective bargaining, plus any advance in the cost of living as it now appears compared to the cost of living at the time the contract was made. This would work out and justify the wage scale in effect as of May, 1917. If the miners would accept this and return to work, coal prices would be lowered to a point where industry could function. The railroads, having cheaper fuel, could more reasonably be asked to adjust freight rates on coal, which would in turn further cheapen the cost of coal to the ultimate consumer.

These are the facts the public ought to know, and I hope you, through your valued publication, will help along in the good work.

H. N. TAYLOR,  
Vice-president, Central Coal & Coke Co.

## Common Sense in Branch Passenger Service

WASHINGTON, D. C.

TO THE EDITOR:

I have been in railroad service since 1898, both in the east and the west, and I see branch passenger runs losing money which used to make money before the days of the automobile.

Now, why are the steam roads losing money on these runs when they can stop losing money? Because they are too slow to adopt the tactics, the tools, of the automobile people. I mean by that (1) the gasoline traction, (2) the light cars, and (3) the more frequent service.

As to the first, the traction, I have seen the roads stick to the little old steam locomotives of 30 up to 50 tons, just because they want to wear them out and the work of dragging a light branch train is all that can be found for them to do. And to wear them out it is necessary to pay an engineer and fireman instead of a chauffeur, and some tons of coal instead of some gallons of gasoline.

As to the second, the cars, I have seen the roads stick to the old coaches, not because they best serve the purpose but because, like the old engines, the coaches must be worn out somewhere and this is where, even if a 90-ton train has to be run a hundred miles or so a day to give poorer service than would be given on the highways by a baggage truck and driver and a passenger bus and its driver against a five-man crew on the corresponding steam unit.

As to the third, the frequency of service, I have seen the roads stick to one train a day on branches because that train costs \$50 or more a day to run and who wants to run more trains just to lose more money?

And what have the roads done to better the existing way of doing it? So far as my travels have led me, mainly in the west, the Harriman lines built, some ten years ago, a number of McKeen motor cars and put them in service pretty widely (three or four runs in each state) on branch lines. These identical motors seem to be still in service with no improvements visible to the eye of the people not directly concerned. Why no improvements on these? Are they satisfactory as they run today? They seem to me to be too heavy and they require, or their power requires, too much shopping.

Why are no more attempts being made to run light equipment on branch lines? Is now not a time when every road is seeking less operating expense? Do not a few objections loom up too large—what to do with old motive power and old passenger coaches, and "we can not run equipment that is too light to be hauled in road freight trains if necessary."

But can not these objections be reasoned with? If it can be proved that it costs more to wear out the old equipment than to scrap it and buy and operate new, would not that end the first objection?

And why must new branch equipment be heavy enough to be hauled in freights? Haven't we seen light equipment run on the branches in France? If there, why can we not do it here? I have seen the Hetch Hetchy R. R. in California running the light 20-passenger busses with crew of one man among freight trains on mountain grades. Stopping a light bus at every crossing to get the business is as easy as stopping to pick up your neighbor on the way to the office in the morning. And freights would still continue to clear the time of this passenger train and protect against it.

Then, as business required, a baggage truck and a second or third passenger bus can be added, with operating cost not greater than the present cost of the one steam train.

These are the natural comments of a civil engineer in railroad service, without reference to detailed operating cost, but—are they not common sense?

W. H. BARNES.





Permanent Commission at Opening of Congress—Mr. Riccio, Minister of Public Works of Italy, Speaking

## International Congress Considers Many Subjects

Numerous Countries Represented in Great Railway Meeting  
at Rome—King of Italy at Opening

By Samuel O. Dunn  
Editor of the *Railway Age*

ROME, Italy, April 24.

**T**HE NINTH CONGRESS of the International Railway Association has now been in session in Rome for four days. The last congress was held at Berne, Switzerland, in 1910. The association ordinarily, since its organization 25 years ago, has met at five-year intervals. It was to

affair. The King of Italy paid the compliment of being present. The convention hall was decorated with a portrait of the king back of the president's chair and flags of practically all the nations having railways which belong to the congress. The ladies were admitted, and all the seats in the large hall were taken, and many stood during the session.

The first address was made by Mr. Riccio, Minister of Public Works of Italy, under whose department the state railways of the country are operated. Mr. Riccio recalled that the second session of the association, at which its permanent organization was really formed, was held at Milan a quarter of a century ago, and was opened with an address by the Italian Minister of Public Works of that time. He presented some statistical data regarding the development of the Italian railways since then, showing, among other things, that the mileage has increased from about 7,000 miles, including secondary lines, to about 13,000 miles. Over 10,200 miles are owned and operated by the state. There are now under construction by the state 437 miles of standard gage and 118 miles of narrow gage lines, and 680 miles of line are being built by private companies. In addition, the construction of about 842 miles is projected.

Mr. V. Tondelier, of the Belgian Railways, president of the Permanent Commission of the Association, replied to the address of Mr. Riccio. He referred briefly to the history of the association and to the program of this congress. He was followed by Mr. Crova, Director-General of the Italian State Railways.

### Electrification Progress in Italy

Some of the most interesting statements made by Mr. Crova were in reference to the electrification of the Italian lines. "The problem of electric traction," he said, "has been the subject of our most profound study. After the experiments on the Milan-Sondrio-Tirano lines and the Milan-Varese line, the first worked by an overhead wire at a tension of 3,000 volts, and the second by a third rail, experiments made by the former railway companies, the administration of the state railways decided definitely to adopt the system.



Party of Delegates Visiting Hydro-Electric Works at Terni

have met in Berlin in 1915, but the war prevented this. In the 12 years that have elapsed since the last congress more important things affecting the welfare of mankind have occurred than in any equal previous period in history.

For one thing, the importance of railroad transportation as a factor in modern warfare has been strikingly exemplified. It is an illustration of the desire felt all over the world to forget about the war and return to "normalcy" that the program of the International Railway Association, which is meeting in Europe, where the effects of the war are seen and felt on every side, does not say a word about the use of railways in war.

The formal opening of the congress was at the Exposition Palace on Tuesday afternoon, April 18. It was quite a gala

of overhead wires even on the steepest gradients. They began with the two lines of the Giovi, which have become insufficient to carry the enormous traffic of the port of Genoa.

"The benefits obtained by this first application suggested the study of the vast problem of electrification. The difficulties of the war obliged us to delay the work already commenced. When hostilities ceased, these experiments were actively renewed; a vast plan of accurately organized work gives us the certainty that six or seven years hence it will be possible to work by electricity about 3,125 miles of heavy traffic lines in our country. Today the lines Bologna-Florence, Faenza-Bologna, Genoa-Pisa, Rome-Tivoli, Rome-Anzio-Nettuno, are being electrified. The work on the Ronco-Trofarello line has recently been completed."

Because of its many mountains and the extremely high cost of coal, conditions in Italy are very favorable to electrification.

Following the opening session, the congress was divided into five sections. Each section has its own president, vice-president and secretaries. The subjects considered by the different sections are classified under the following general headings:

1. Way and Works.
2. Locomotives and Rolling Stock.
3. Operation.
4. General.
5. Light Railways.

The various reports which have been prepared are first submitted and discussed in the sectional meetings. Con-

"Special Steels," W. C. Cushing, Engineer of Standards, Pennsylvania System.

"Reinforced Concrete," G. A. Haggander, Chicago, Burlington & Quincy.

"Passenger Carriages," W. J. Tollerton, Chief Mechanical Superintendent, Chicago, Rock Island & Pacific, and Chairman of the Mechanical Section of the American Railway Association.

"Electrical Traction on Lines of Heavy Traffic," George Gibbs, Chief Engineer of Electric Traction, Long Island Railroad.

"Terminal Stations for Passengers," A. S. Baldwin, Vice-President, Illinois Central Railroad.

"Freight Stations," H. G. Kelley, President Grand Trunk Railway.

"Slow Freight Traffic," W. H. Williams, Vice-President Delaware & Hudson Company.

"Cost of Service in Relation to Rates," Samuel O. Dunn, Editor of the *Railway Age*.

"Interchange of Rolling Stock," C. W. Crawford, Chairman of the General Committee Section V (Transportation) American Railway Association.

"Workmen's Dwellings," A. F. Banks, president of the Elgin, Joliet & Eastern.

"Special Methods of Traction on Light Railways," H. B. Spencer, formerly director of purchases, United States Railroad Administration.

Of the American reporters mentioned, Messrs. Tollerton, Gibbs, Baldwin and Dunn are attending the Congress.



Section I—Way and Works

clusions regarding each question submitted for consideration are drawn up and adopted in the sections. Each set of conclusions will be reported next week to the general meeting and modified, rejected, or accepted by it.

George Gibbs, chief engineer of Electric Traction of the Long Island Railroad, was elected president of Section 2. General W. W. Atterbury, vice-president of the Pennsylvania Railroad, was elected vice-president of Section 4. These are the only officers of American railways who have been elected officers of the sections.

#### Participation of American Delegates

As might be expected, the railways of some countries which have had strong delegations in past congresses, are not represented in this one. For example, there are no delegations from the railways of Germany and Russia. The meetings of the sections have been well attended, and there have been some very animated discussions, especially on the subjects of electrification and light railways.

Among the Americans who prepared reports especially for this congress, and their subjects, are the following:

"Construction of Roadbed and Track," C. H. Ewing, Vice-President, Philadelphia & Reading.

"Maintenance and Supervision of the Track," Earl Stimson, Chief Engineer of Maintenance, Baltimore & Ohio.

Other American railway men here are J. E. Fairbanks, general secretary of the American Railway Association; Dr. D. Z. Dunott, of the Western Maryland, chairman of the Medical and Surgical Section of the American Railway Association; Hugh Pattison, electrical engineer, and Donald Rose, European traffic manager of the Illinois Central; Rollin H. Wilbur, vice-president and general manager, Lehigh & New England Railroad; J. V. B. Duer, electrical engineer; W. B. Wood, general superintendent, Illinois Division, Col. R. C. Morse, Jr., superintendent of freight transportation, Eastern Region, and J. O. Hackenberg, superintendent Schuylkill Division, all of the Pennsylvania System.

President A. T. Dice and General Manager F. M. Falck of the Philadelphia & Reading, who were here last week for part of the session, have departed.

General Atterbury has not come yet, but is expected this week. The same is true of L. A. Downs, vice-president and general manager of the Central of Georgia, who is chairman of the Engineering Section of the A. R. A.

D. F. Crawford, vice-president of the Locomotive Stoker Co. and president of the Westinghouse Union Battery Co., Walter F. Schleiter of Pittsburg, and John William Lieb, vice-president of the New York Edison Company, are attending as delegates of the United States government, appointed by the Secretary of State. Col. E. A. Simmons, president



of the *Railway Age*, also was appointed as a delegate of the United States government, but found it impossible to attend. Among the other Americans here are Andrew Fletcher, president of the American Locomotive Company; W. H. Woodin, president of the American Car & Foundry Co.; F. A. Poor, president of the P. & M. Company; George L. Bourne, president, and Fred Schaff, vice-president of the Superheater Company; H. P. Austin, Baldwin Locomotive Works; Messrs. Drysdale, Sullivan and Cullerton of the Worthington Pump

then been the recognized rendezvous of all the American railway men and railway supply men in Europe.

#### Entertainment Features

The Italian section of the congress has provided several forms of entertainment for the delegates and their ladies. One of the most remarkable was the dinner given on Wednesday evening, April 19, by the Italian government. This dinner occurred in the Baths of Diocletian, a vast structure



Section II—Locomotives and Rolling Stock, George Gibbs Presiding

Company; Walter J. Plogsted, General Railway Signal Company; F. K. Vial, consulting engineer Association of Manufacturers of chilled car wheels.

#### Important Men from Other Countries

While the attendance from the United States is small, the delegations from other countries are important and highly representative. For example, among the British railway officers here are Sir Herbert A. Walker, general manager of the London & South Western, who was the active chairman of the Railway Executive Committee during the War; Major General Sir Henry W. Thornton, formerly an American railway officer, now general manager of the Great Eastern, who has won a place in the foremost rank of British railway officers; F. J. C. Pole, general manager of the Great Western; Charles Booth, Chairman of the Midland; C. H. Dent, general manager of the Great Northern, and numerous others.

near the railway station which was built early in the fourth century A. D., and which is still in a fair state of preservation. The dinner was attended by about 2,500 persons, and considering the size of the crowd and the place where it was held was well handled. Short speeches were made by Messrs. Tondelier, Riccio and others, but the band insisted on playing during the speaking, and the acoustics were so bad and the crowd so big that the addresses could not be heard ten feet from the speakers.

A reception was given the visitors at the Capital on Thursday; and there have been several motor rides about the ancient monuments of Rome; and on Saturday, April 22, a large party went to Terni to visit the steel works, hydro-electric plants, and so on.

It would be entirely impossible even to summarize in a few short articles the proceedings of a congress that is working daily in five sections. All that can be done is to



Section IV—General

The French delegation is similarly constituted. The congress fully lives up to its title of "International," since the following is but a partial list of the countries whose railways are represented by delegates actually here and participating: Sweden, Italy, Great Britain, France, Norway, United States, Spain, Brazil, Mexico, Peru, Belgium, China, India, Greece, Portugal, Denmark, Uruguay, Siam, Switzerland, Belgian Congo, Nigeria, Argentina, Czecho-Slovakia, Luxembourg, Tunis, Algeria, Japan, Poland. Needless to say, the discussions frequently recall the tower of Babel.

Mr. Fairbanks, the ever efficient general secretary of the American Railway Association, arrived a few days before the congress began, and opened headquarters for the American delegation at the Grand Hotel; and this hotel has since

mentioned very briefly some of the high points brought out in the reports and discussions.

#### Construction of Roadbed and Track

There were five reports on construction of track and roadbed, two for America (by the late H. U. Mudge and by C. H. Ewing) one for Great Britain, one for Denmark, Norway and Sweden, and one for all other countries. These included reports prepared for the Congress that was to have been held in Berlin as well as especially for this congress.

The reports agreed that the maximum speeds of trains have not increased appreciably within the last ten years, the present maximum speeds being the greatest that are compatible with safety under the existing conditions of con-

struction of the lines. In Great Britain and America 80 miles an hour appears to be the maximum attained; in France, 74½ miles; in Denmark and Sweden, 56 miles, and in Norway, 37½ miles. There has been a substantial increase in the weight of passenger trains. The maximum loads on driving axles were found to be: America, 27.6 tons (passenger) and 30 to 34.3 tons (freight); Great Britain, 20 tons; France, 18 tons; Scandinavia, 17½ tons. In all countries efforts have been directed toward strengthening the track. Some of the most interesting facts given are those about the weight of rails. The unanimous opinion of the European reporters is that there is no advantage in increasing the weight of rail beyond 95 to 100 lb. per yard. On the other hand, it was shown that in America many important railways within the last five years have put into service sections weighing as much as 130 lb. per yard.

All the reports on the maintenance of track dwell especially on the increase in cost due mainly to advances in the wages of labor, and to the consequent necessity for better supervision of labor and the use of more labor saving machinery.

The adoption of gasoline motor cars for section work and of cars especially designed to handle ballast was emphasized in the American report. All the reports made more or less mention of applying the contract system to maintenance work. The recent adoption of the contract system was reported by

the other hand, in the United States the axle load approaches 30 tons, and under present day conditions of superheating, this is sufficient to utilize the output of the largest boiler that the loading gage allows. Thus it is that in America the tendency is to carry the superheat to a higher temperature and use higher pressures. This is notably the case on the Pennsylvania Railroad in its latest experimental locomotives constructed by the American Locomotive Company, which are fitted with the Locomotive Superheater Company's type F. superheater."

A large number of railways, M. Lacoïn points out, have found it desirable to superheat old saturated locomotives. One of the principal difficulties met with is the fact that many old engines have flat slide valves. Attention is particularly called, in this connection, to the very interesting application of superheating carried out by the Swiss Federal railways which have been successful in applying the superheater to engines with flat slide valves by providing oil ducts across the surface of the valve face.

The report mentions that feed water heating apparatuses have been much modified and improved since the last congress.

It says the types of apparatus in which a pump and surface feed water are used are the most numerous. Another variety mentioned is the pump in connection with the type of heater in which steam mixes with the feed water, as in the



Section V—Light Railways

some railways in Great Britain, India, France, Belgium, Italy and Portugal. The Italian state railways have made experiments with the contract system on a large scale. In some cases they have contracted with co-operative societies of workmen; in others with small and in still others with large contractors. It seems to be the general opinion that contractors can get better results from labor than the managements of either state railways or large private railways. The reports are a unit in favoring the introduction of more labor saving devices, and more extensive employment of those already in use.

#### Improvements in Locomotives

There were two interesting reports on the "Economic Production and Use of Steam on Locomotives." M. Lacoïn (Paris-Orleans Railway), summarizing these reports, said they show the superheater apparatus has now been brought to such a degree of perfection that locomotives thus equipped can be employed as easily and with practically the same amount of maintenance as saturated engines, and that "a superheater allows a considerable degree of improvement to be realized both as regards fuel consumption and loads handled." He called attention to the fact that "the position of the problem of superheating does not appear to be identical in Europe and America. In Europe the maximum axle load being as a rule not greater than 20 tons, it is not possible to increase the power of the boiler without increasing the number of coupled wheels. Thus it is that the European Pacific class engines are as much limited by the adhesion necessary when starting as by their boiler capacity. On

Worthington heater. "The economies claimed by the various railways," says M. Lacoïn, "range from 10 to 20 per cent, but it is very difficult accurately to measure the results obtained. The time appears to have arrived for the use of feed water heaters to become general; but the trials carried out on numerous railways have not yet afforded sufficient information to allow definite opinions to be favored as to the superiority of one or the other types of apparatus."

#### Passenger Cars

The reports on passenger cars brought out rather strikingly some differences between the practice of American and other railways. W. J. Tollerton, the American reporter, noted that in the last eight years 19,900 passenger coaches have been built by American railways which answered his questionnaire, and that of these 90 per cent were entirely of steel, and the rest of mixed construction with steel frames. On January 1, 1921, about 60 per cent of American passenger cars were of wood, 10 per cent of wood with steel underframes and 30 per cent entirely of steel. Mr. Tollerton expressed the opinion that the time is not distant when all passenger cars (in America) will be built entirely or almost entirely of metal.

The other reports showed that passenger cars built entirely or even largely of metal are almost unknown outside of America.

#### Slow Freight Traffic

The four reports on "Slow Freight Traffic" dealt with the problems presented particularly in the United States, Bel-



gium, Great Britain and Italy. They showed that the general tendency, in the interest of maximum economy of operation, is "toward increasing the tonnage and capacity of wagons, with the object of increasing the useful load in relation to the tare." On the continent of Europe the capacity of freight cars seldom exceeds 20 tons. On the other hand, in America it always exceeds this. All the reports recognize the economy of using large cars where the conditions make it practicable to get large loads. There is also a tendency in Europe as in America, toward increasing the number of cars in a train, the figure of 80 cars being attained.

#### Costs of Service in Relation to Rates

The reports on "Costs of Service in Relation to Rates" caused an animated discussion in Section IV. Especial interest is being taken in several European countries now in the relationship of railway costs to rate-making—a subject which has long been under study and discussion in the United States. It is probably significant that the three reporters—M. Henry-Greard of the Orleans Railway (France), Fairfax Harrison, president of the Southern Railway, who dealt with conditions in the United States prior to 1915, and Samuel O. Dunn, who dealt with developments since 1915—all approached the subject in much the same way and reached practically identical conclusions. These conclusions were in substance: first, that operating expenses may be divided with approximate accuracy between freight and passenger service; second, that the allocation of capital charges between the two services offers far greater difficulties, and cannot be carried out at all except by resort to arbitrary hypotheses; third, that cost is not and cannot be made the determining factor in rate-making, although such knowledge of it as can be obtained is a useful aid. When the question is that of a modification of rates to develop new business, the cost that should be considered is not the average cost of handling the existing business, but the additional cost that will be caused by handling the extra business.

#### Views on Locomotive Cab Signals

The reports of M. Verdeyen of the Belgian State railways and M. Villa of the Italian State railways on "Locomotive Cab Signals" should be of unusual interest at the present time in the United States, where the subject of automatic train control is under consideration. M. Verdeyen recalls that the principle of the automatic train stop was condemned in France in 1913, and he still upholds this view. He argues against automatic train control on the ground that it will reduce the carefulness of the engine driver, "whose vigilance must always be the first factor of safety." He does, however, favor audible cab signals to warn the driver of the position of distant signals. There is some difference of opinion among the reporters as to whether the cab signals should be audible or visible. They agree in emphasizing that in no case should they be accepted as a substitute for visual signals beside the track. They favor speed recording devices on locomotives as measures of safety and aids to the drivers in accurately maintaining their running schedules.

The foregoing briefly summarizes only a part of the reports and discussions. The writer hopes later to send further information regarding the reports and discussions, and the formal conclusions reached by the congress.

A BETTER BULL TRAIN is the latest railroad device to aid the farmers. It is to be run by the Canadian Pacific this month over the company's lines in the province of Saskatchewan. It is to be operated in co-operation with the provincial government. In Manitoba, which is farther east and more conservative in its terminology, there is to be a similar excursion under the name of the "Livestock Improvement Special."

## Intrastate and Interstate Rates Being Harmonized

WASHINGTON, D. C.

THE INTERSTATE COMMERCE COMMISSION has issued a statement calling attention to the fact that its order issued on May 4 vacating its orders affecting Texas intrastate rates discontinues all outstanding orders in the Shreveport case and with the consent of all parties closes the proceeding which was initiated on March 7, 1911, more than 11 years ago, when the Railroad Commission of Louisiana filed a complaint with the Interstate Commerce Commission alleging that rates from Shreveport, La., to points in Eastern Texas were unreasonable and unduly prejudicial as compared with rates on like traffic from competing points in Texas to destinations in that state. This closes a case, the first of this kind, in which the Supreme Court has held that in regulating the rates of interstate carriers where their interstate and intrastate operations are so interwoven that the control over the one necessarily involves control of the other, it is the nation and not the state which is supreme within the national field.

The commission's statement says that under the present interstate commerce act provision is made for co-operation between the federal and state authorities and steps are being taken to minimize, if not eliminate, the occasions for conflict between state and interstate rates and gratifying progress has been made. This refers in part to the plan for co-operation between state and federal authorities made public in the report of a joint committee of state and federal commissioners published in last week's issue of the *Railway Age*. This report is the result of a number of conferences between the Interstate Commerce Commissioners and representatives of the National Association of Railway and Utilities Commissioners, which had also led to results prior to the announcement of the plan of co-operation which have been made manifest from time to time recently in the vacation by the Interstate Commerce Commission of its orders increasing intrastate rates by the amounts of the increases applied to interstate rates in Ex Parte 74.

The Supreme Court in the Wisconsin case having sustained the Interstate Commerce Commission's orders, a number of the state commissions have withdrawn or modified their orders which were intended to prevent the railroads from applying the Ex Parte 74 increases to state traffic or have issued other orders leaving the increased rates in effect by state authority. Following this action by state commissions, the Interstate Commerce Commission has withdrawn its orders applying to intrastate rates, thereby relieving the cause of complaint by the state authorities that their entire rate structure had been "frozen" because no adjustment in local rates could be made without application to the Interstate Commerce Commission. The state and interstate rates in these cases are now harmonized, but the state authorities are left free to make local adjustments providing they are such as not to discriminate against interstate commerce.

The notice issued by the commission reviews briefly the history of the Shreveport case and its various orders therein, the result of which was that a large part of the intrastate traffic in Texas has since November 1, 1916, moved on rates corresponding to the interstate rates found reasonable by the federal tribunal. Following the Supreme Court's decision in the Wisconsin case, the Texas commission on April 26 made an order prescribing intrastate rates for use within the state of Texas on the basis now in effect under previous orders of the Interstate Commerce Commission. The rates were those brought into harmony by the action of both commissions, and it was no longer necessary to restrain the Texas carriers by exercise of the federal authority in respect of these intrastate rates. The Interstate Commerce Com-

mission accordingly vacated on Thursday of last week its outstanding orders in the Shreveport case and discontinued the proceeding with the consent of all parties. The commission also has vacated its orders applying to Missouri intrastate rates, and it recently took the same action in the Illinois and Indiana cases.

## Railroad Executives Asked to Confer With President

WASHINGTON, D. C.

**I**MPORTANT QUESTIONS of policy concerning railroad freight rates are to be discussed at a conference of some fifteen leading railroad executives with President Harding at a dinner at the White House on May 20, it was officially stated at the White House on Tuesday, although the exact nature of the questions to be discussed was not explained. The announcement that the President had invited the railroad men for a conference was called forth by a question regarding rumors that the Interstate Commerce Commission, having thus far failed to announce a decision as to whether and to what extent rates may be reduced under the law and in the present circumstances, had referred to the President in some way for an indication of policy. This was denied and it was pointed out that the commission is governed by a law on the subject and not by the wishes of the Executive. It is understood that the ideas to be discussed at the dinner emanate from Secretary Hoover rather than from the commission, but that the railroad men themselves were not informed of the purpose of the conference. No list of the executives was given out.

The indefiniteness of the information given to newspaper men, however, at once led to newspaper speculation as to whether, in view of the delay on the part of the commission in issuing a report as the result of its recent rate investigation, the commission had not become deadlocked and the railroads were to be asked voluntarily to reduce rates in the same way they were strongly urged to do last fall before the commission had reached the point where it was willing to order some reductions.

Another suggestion was that the railroad executives were to be asked to discuss the wisdom of an amendment of the revenue provisions of the transportation act to meet the views of those who feel that the intent of the law to provide "as nearly as may be" to a given percentage of return does not allow either the railroads or the commission sufficient flexibility in the adjustment of rates to meet general business conditions and the changes in the value of commodities. Secretary Wallace of the Department of Agriculture has publicly objected on several occasions because freight rates are so high in proportion to the value of agricultural products and Secretary Hoover of the Department of Commerce, who is understood to be particularly influential in the formation of administration policies relating to transportation, has also suggested the desirability of readjusting rates in more direct relation to commodity values even to the extent of advancing rates on high class articles if necessary in order to get lower rates on basic commodities or raw materials. One of his objections is that under the law the tendency is for rates to be higher in times of depression when traffic can less afford to pay them and lower in times of prosperity when people are less inclined to be critical of the amount of the rates.

In his statement before the commission on February 3, Mr. Hoover said:

"During the past eight months the railways have made many thousand readjustments of local rates in endeavoring to heal local distortions, but I am convinced that the whole railway rate structure needs a most systematic overhaul in the light of these new economic forces that have been brought

into play. We obviously must maintain the average rate that will support our transportation systems adequately and such an overhauling of rates might well mean the advancement of rates in certain commodities in order that compensation can be given to others where there is undue duress."

No intimation has come from the commission as to how soon a rate decision may be expected but there has been no indication that one would not be forthcoming soon. The commission has had the case under consideration for two months since the arguments were concluded on March 13 after three months of hearings. It has been understood that there was for a time a wide divergence of opinion among the eleven commissioners, some of whom it is said favored reductions on certain commodities, others of whom thought that any reduction ought to be general, while others insisted that the railroads should be allowed to get on their feet before rates are reduced. Those who favor reductions presumably have convinced themselves that lower rates will make it possible for the roads to earn a fair return sooner than will the present rates, but it is understood that there has been great difficulty in getting six of the eleven commissioners to agree on a list of commodities as to which they were prepared to say that lower rates would stimulate traffic. This does not mean, however, that the commissioners have not been able to reach any agreement.

There has been a widespread general assumption that the commission would order reductions on coal and other basic commodities such as possibly ore, iron and steel, lumber and building materials. Of the shippers who testified at the hearings, a large number preferred lower rates on coal to reductions even on their own commodities, but it is considered probable that some of the commissioners found difficulty in convincing themselves that lower rates would move more coal than the railroads would be called upon to move anyway after the strike and the recent large increases in the loading of miscellaneous freight and other commodities on which little or no reductions in rates have been made, tended to strengthen the arguments of those who believe that freight rates were a comparatively unimportant factor in causing the business depression.

The agitation in Congress for lower freight rates has died down to a considerable extent recently, whether because of the improvement in business conditions or because of the expectation of an early decision by the commission. Similarly there has been much less discussion of proposed amendments to the transportation act, although many bills for that purpose were introduced last year. The state railroad commissioners have kept the subject alive by pressing for amendments particularly intended to eliminate the enlarged jurisdiction of the Interstate Commerce Commission over their rates but the House committee on interstate and foreign commerce has displayed little interest in them and has repeatedly postponed its hearings on the Hoch and Sweet bills. The hearing was resumed on May 9 for the questioning of John E. Benton, general solicitor of the National Association of Railway and Utilities Commissioners' and Representative Hawes proposed that the subject be postponed until December, but the committee finally voted to continue hearings and representatives of the railroads are to be heard next Tuesday. Chairman Cummins of the Senate committee on interstate commerce has been trying to get a meeting of his committee to agree on a report on the Capper and similar bills on which hearings were concluded several weeks ago.

**THE HOBOKEN MANUFACTURERS' RAILROAD**, an industrial line operated by the War Department, is offering for sale some of its real estate holdings in Hoboken, N. J. This line was acquired by the government in connection with the army transport pier services during the war. With the end of the war, land acquired for expansion of the line was found superfluous and an attempt is being made to dispose of it.



# Labor Board Disapproves Contracting of Repairs

## Decision in Case of Indiana Harbor Belt Indicates Attitude Regarding Many Similar Cases

THE CONTRACTS made by the Indiana Harbor Belt for the operation of its shops are in violation of the Transportation Act and of decisions No. 119 and No. 147 of the Railroad Labor Board according to a decision adopted unanimously by the board and handed down on May 11. The decision also holds that the shop employees of the contractor in this case are under the jurisdiction of the Board and subject to the application of the Transportation Act and decision No. 147. The carrier is directed to take up the matter of reinstatement with any employee upon the latter's application.

### The Board's Decision

"The Labor Board decides," the decision reads, "that the various contracts entered into between the Indiana Harbor Belt Railroad Company and the Burnham Car Repair Company for the operation of its shops are in violation of the Transportation Act insofar as they purport or are construed by the carrier to remove said employees from the application of said act, and that those provisions of the contracts affecting the wages and working rules of said employees are in violation of decisions No. 2, No. 119 and No. 147 of this Board."

After citing the history of this dispute the Board's decision says:

"The Board is of the opinion that the employees failed to substantiate their contention that the contracts are actually fraudulent and that they are mere subterfuges contrived to evade the act but the carrier contends that it is lawful evasion.

"This contract system is not an innovation recently born of the desire to circumvent the Transportation Act. It existed long before the Transportation Act was ever dreamed of. In fact it was practiced as far back as 1855 on the Philadelphia, Wilmington & Baltimore and it is pertinent to note that the actual operation of the trains on this road was let by contract.

"This leads up to the remaining and principal issue in this case; namely, had the carrier the right to enter into such contracts as takes this class of employees from under the application of the Transportation Act and the jurisdiction of the Railroad Labor Board. No more important dispute has ever come before this Board for adjudication. It goes to the vitals of the Transportation Act. If the carrier can legally do the thing which has been done under these contracts then the entire Transportation Act can be nullified and the will of the Congress of the United States set at naught. If one class of employees can thus be taken from under the application of the act there is no sound reason why each and every railroad employee in the United States cannot be given like treatment. One class of employment lends itself as readily to this method as another. Contracts have been recently entered into by various carriers purporting to turn over to so-called independent contractors the work of the following classes of employees. The six shop crafts, the maintenance of way, certain employees embraced in the clerks' organization, the firemen and oilers, the hostlers embraced in the engine service and signal department employees.

### The Carrier's Argument

"It is intimated by the carrier that perhaps the actual operation of the trains could not be let to an independent contractor because that would be a violation of the carrier's charter, that it would not be permitted to transfer the very power for the exercise of which it had been created unless it delegated it to another common carrier. This is not a clear

distinction for the carrier in such case would still be answerable to the public for the performance of its functions as a common carrier and would not have contracted away this responsibility. It would merely have changed its method of paying its transportation employees as it has its shop employees in the case under consideration.

"When Congress in this act speaks of railroad employees it undoubtedly contemplates those engaged in the customary work directly contributory to the operation of the railroads. It is absurd to say the carriers and their employees would not be permitted to interrupt commerce by labor controversies unless the operation of the roads was turned over to contractors in which event the so-called contractors and the railway workers might engage in industrial warfare ad libitum. In other words, Congress did not say to the carriers 'you must not precipitate trouble by the adoption of arbitrary measures with your employees but you may delegate to a contractor the power to violate and annul all your agreements and if it happens to result in an interruption of traffic the public will be deprived of such protection as the Transportation Act could give.' As a matter of fact that is practically the sole effect of the contracts involved in this case. A strike by the employees of a contractor or contractor agent of a carrier would as effectually result in the interruption of traffic as if the men were the direct employees of the carrier."

### The Function of the Contractor

The decision then cites the manner in which "the car repair department of this carrier has undergone no real change so far as the public is concerned."

"There need be no misunderstanding of this situation," the decision continues, "the contractor performs only one useful function in this operation. He is the medium or channel through which the piece work system was substituted for the lawfully established wage scale. The contractor's compensation for this is five per cent of the amount of the payroll and the rate of pay is carefully limited by the piece work provisions in the contract. The contractor takes absolutely no risk.

"In the able brief of the carrier's counsel several decisions of federal courts are cited which construe contracts more or less similar to those involved herein and which define and construe the relationship of the railroad company, the contractor and those who work for the contractor. These cases involve the question of the railroad company's liability for injuries incurred by the contractor's employees usually under the federal employers liability act. None of these cases are in point here because a different principle and a different statute are involved. The principle involved in all those cases is the duty and responsibility of the employer to the employee. The Federal Employer's Liability Act has for its purpose the compensation of employees injured in the service of the employer. That statute affected only the private relations between the employer and the employee. Naturally, it sought no purpose and contained no provision that could be construed as a denial of the carrier's right to contract its work and relieve itself of liability for injury to employees and others. On the other hand, the Transportation Act was not enacted primarily for the protection of the rights of either carrier or employee except insofar as such protection was involved in the paramount purpose of the act; that is, to insure to the public as far as possible efficient and uninterrupted railway transportation by protecting the people from the loss and suffering incident to the interruption of

traffic growing out of controversies between the carriers and the employees who do their work. This act is the Congressional assertion of a public right.

"It may seem immaterial to the public what method or arrangement the carrier adopts to secure the performance of the work essential to its operation. But it is immensely important to the public that this work be carried on in a peaceful and orderly manner. It may seem immaterial to the public for the carrier to contract out any of its work. But it is important if by such contract the carrier seeks to remove its employees from under the application of a law which the people have enacted for the purpose of maintaining industrial peace on the railways. There is a public interest in the carrier's methods greater than may appear on the surface. The contracts herein involved violate the spirit and purpose of the Transportation Act and in effect set aside the wage decisions of the Railroad Labor Board to which the carrier was a party and which the carrier put into effect.

"To all intents and purposes the contractor's operations constitute a department of the carrier with a piece work system which has been forced upon the men by the discharge of some and the dread of discharge and unemployment of others and which has never been submitted to the Railroad Labor Board in the form of a dispute as a compliance which the statute requires. The contractor is in effect merely an agent of the carrier.

"The Board can understand how the carrier reached the conclusion that it had the right to make such contracts because somewhat similar ones had been made through a long course of years; but those precedents have been robbed of their potency by the enactment of the Transportation Act which the courts of the country without exception so far have declared to be constitutional.

"This decision rests upon the facts of this particular case," the decision said in conclusion, "and the decision of each of the other contract cases pending before the Board will rest upon its own facts and the general principles herein declared."

## Railway Wages Discussed by Agricultural Commission

WASHINGTON, D. C.

ONE OF THE FINDINGS to be made by the Joint Commission of Agricultural Inquiry to Congress in its forthcoming report will have reference to the railroad labor situation. Chairman Sydney Anderson, outlining the commission's conclusions on this subject, said: "We have found that the compensation paid to railroad employees increased 151 per cent in 1920 over 1916, and to 105 per cent in 1921 over 1916; that the increase in the number of employees in 1920 over 1916 was 384,830, and that in most cases the number of hours' work increased in much lower ratio than the number of employees.

"The price of transportation is necessarily governed by its cost of transportation. There is, therefore, a very definite relation between the price which the public pays for transportation and the cost which the railroad pays for labor, material, and equipment.

"Certain elements which enter into this cost are now subject to regulation by the Interstate Commerce Commission or by other public bodies. The Interstate Commerce Commission now controls the issuance of railroad securities, and, to some extent, the capital charges arising from them. It controls expenditures for new lines and extensions. In general, however, expenditures for material and equipment are within the province of management, subject to the same economic rules which apply in other industries. Wages paid by railroads are subject to initiation, determination, and

control by the Labor Board. Wages constituted 66.4 per cent of railway operating expenses in 1916, and 63.4 per cent in 1920, and are therefore the largest single factor in the cost of transportation.

"We thus have, therefore, the anomalous condition of one governmental body controlling the price of transportation and another governmental body controlling the major element of cost of transportation.

### Adjustments Boards Not Created

"It has been found by the commission that adjustment boards have not been created by the carriers and the employees in all cases, and that where created they have not always functioned in the final settlement of disputes between carriers and their employees. They have not functioned to settle disputes finally because both employees and employers, having the right to resort to an appellate tribunal, almost invariably exercise the right on the chance that an appeal will result in a reversal and a determination of the adjustment board in their favor. In many cases the Labor Board has taken jurisdiction of disputes which have not previously been the subject of determination by adjustment boards.

"This has resulted in bringing before it a large number of disputes with respect to wages and working conditions applicable to individuals or small groups of individuals, which by their number tend to overburden the board and keep it from promptly considering the settling questions of larger aspect.

"The commission believes that in the settlement of ordinary disputes as to wages or working conditions the carriers and their employees stand upon an equal footing, and their disagreements should be settled by the ordinary process of adjustment applying in other industries. It is only where such disputes threaten to interrupt commerce that the paramount public interest justifies the interference of a governmental body.

"There is also a distinction between the general wage levels on railroads and those of other industries, and there are further distinctions between wage scales for classes of railroad labor and those applying to the same or comparable labor in other industries. These distinctions cannot well be preserved by rigid public regulation. Control over the details of the process of operation is essentially the province of management, while control over transportation rates is essentially governmental.

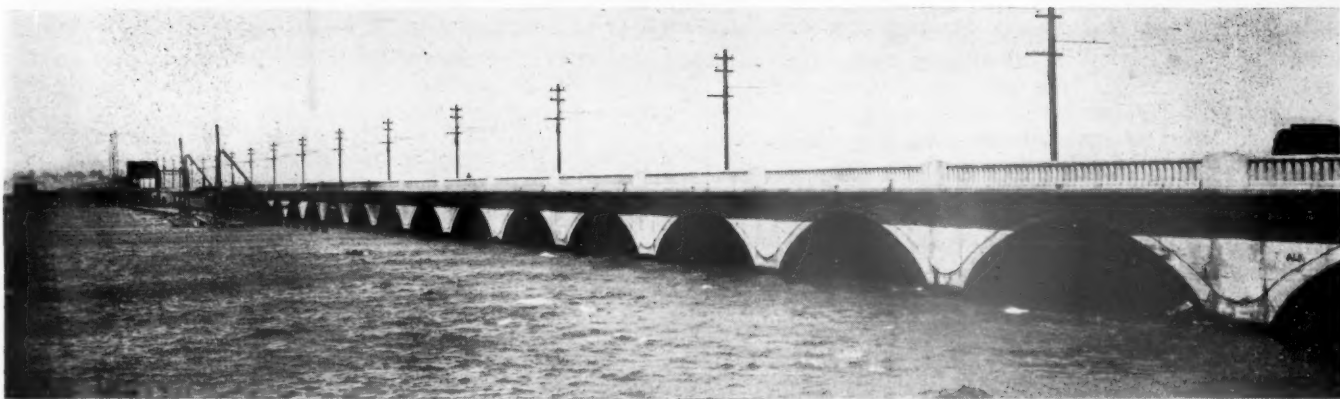
"The function of government is not to enter the field of transportation wherever it can, but only wherever it is needed to protect the paramount public interest in uninterrupted service efficiently performed at reasonable rates.

"Subject to the restrictions which flow from this principle, railroad management should be as free to exercise individual initiative and judgment in the determination of operating conditions as management in any other enterprise. Employees likewise should be as free to resort to the measure of organization or action necessary for their full protection as labor in other industries.

"Therefore the employment relations of carriers and their employees, whether individual or collective, should be primarily established on each road between man and management on terms mutually satisfactory, and they should be left free to reconcile their differences by adjustment methods of their own selection. Experience demonstrates that a continued arbitration body to which either party may refer these disagreements multiplies rather than minimizes these disputes."

Figures will be presented in the report showing the relation of wages paid several classes of railroad employees, industrial workers, and farm labor, together with indices of the wholesale commodity prices and the cost of living.





*Putting the Finishing Touches on the New Causeway*

## Rebuilding of Galveston Causeway Nearly Complete

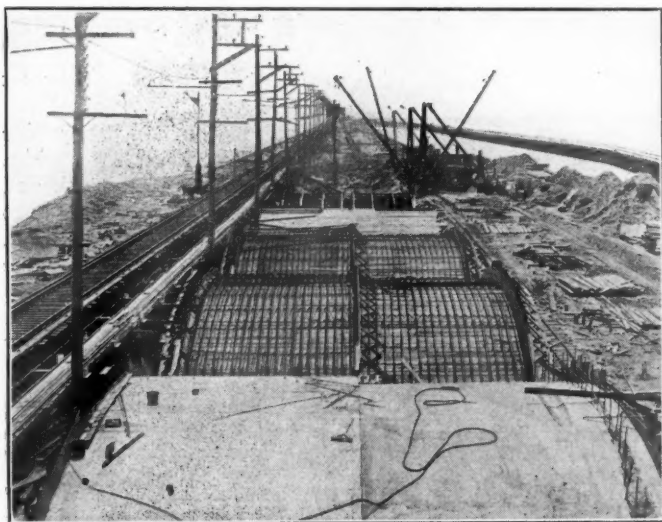
**Railroads Bear Large Portion of the Expense of Restoring  
the City's Mainland Connection**

**W**ITH THE COMPLETION of the construction now in progress on the causeway at Galveston, Tex., another chapter will have been completed in the dramatic history of that city's connection with the mainland. As the sole means of rail and highway communication between Galves-

ton island and the Texas mainland this causeway has borne a vital relation to the city's welfare. Completed in 1912 as one feature of the city's program for restoration from the disaster of 1900, the causeway was severely damaged by a storm in August, 1915, and now, after nearly five years' work, is being completed a second time with such modifications in the original structure that its security against future storms is assured beyond reasonable question.

At the time of the storm in 1900, there were three railway trestles and a highway bridge across West bay and these were so badly damaged that only one, the Gulf, Colorado & Santa Fe structure, was restored. It was this trestle, 10,680 ft. in length, which was replaced by the causeway completed in 1912 after nearly three years of work at a total cost of \$1,750,000. The term causeway was applied because the structure comprised both a bridge and a sheathed embankment. There were 28, 70-ft. concrete arches and a 109-ft. Scherzer rolling lift span making up the bridge length of 2,455 ft., and two approach embankments having a total length of 8,220 ft. The arch structure was given a width sufficient to accommodate three railway tracks and a 19-ft. highway.

The embankment forming the approach at each end was for the most part 154 ft. wide and was capable of accommodating five railway tracks and a 38-ft. roadway. It was bordered at each side by a bulkhead composed of reinforced concrete piles 18 ft. long driven so as to project 3 ft. above water at mean tide and finished with a cap of concrete. The two bulkheads were tied together at intervals by 1 1/4-in. tie rods adjusted with turn-buckles. In addition to this, the side slopes were covered with a blanket of concrete six inches



**View of the Arch Construction in the First Stage. Railway Trestle on the Left and Highway Trestle on the Right**

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**Filling on Portion of the Arches First Completed Was Held by a Temporary Retaining While Remaining Section Was Being Built**

thick, cast in place after the filling had been given an opportunity to settle. This projected embankment proved to be the vulnerable feature of the causeway.

On August 16 and 17, 1915, the Texas Gulf coast was

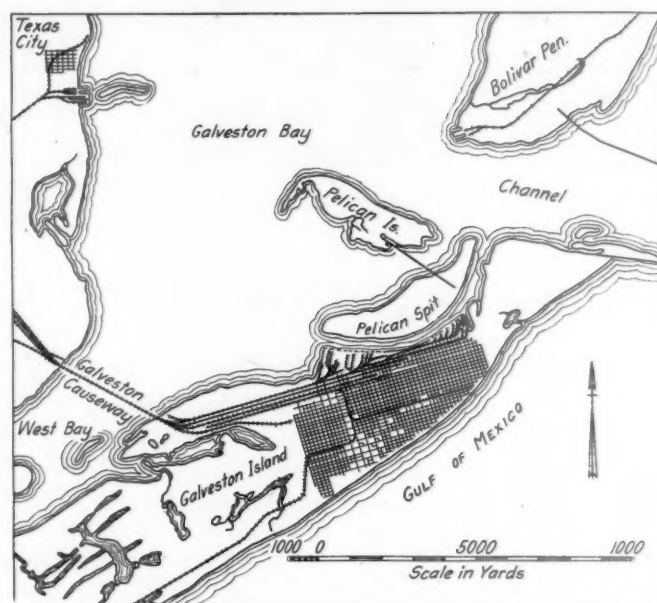
visited by a storm of greater magnitude than that of 1900, but the Galveston seawall measured fully up to expectations and the city was saved from disaster. The causeway was not so fortunate; 2,000 ft. of the embankment at the Galveston end and all of the embankment at the Virginia Point or mainland end was destroyed.

Severe storms on the Gulf Coast are accompanied by high tides at levels far exceeding the normal maximum. The water is virtually piled up against the coast. At such times a corresponding rise in the level of the water in the land locked bays behind Galveston island, and the Bolivar peninsula can be effected only by an enormous inrush of water through the relatively narrow channels. The recession of the water at the close of the storm causes corresponding flows in the opposite direction. Flows of this nature occur in West bay with the changes in water level in that narrow channel which has connections with the main body of the gulf only at the two ends of Galveston island 25 miles apart.

The terrific current that occurred here on the occasion of the 1915 storm demonstrates that the waterways afforded by the 28 arches were inadequate, with the result that the water piled up behind the causeway until it was several feet higher than on the opposite side. The result is well known. The embankment filling was washed away, allowing the concrete slope covering to collapse. It also resulted in the destruction of a 30-in. water main embedded in the embankment and of a similar main in the bed of West bay, the only sources of fresh water supply to the city. The concrete pile bulkheads, which enclose the embankment along each side were not injured. The arch spans also escaped harm, although subsequent soundings disclosed some scouring which for the time resulted in exposing some of the foundation piles to the attack of the marine borers, and it is believed that the scour might have been more serious had not the failure of the embankment served to reduce the discharge velocity through the arches.

Through heroic efforts on the part of the Santa Fe and Southern Pacific forces a temporary pile trestle was completed across the bay in 12 days, thereby restoring rail communication on September 1, 1915. At about the same time a temporary 8-in. water line was connected up across the damaged portions of the causeway to provide the much

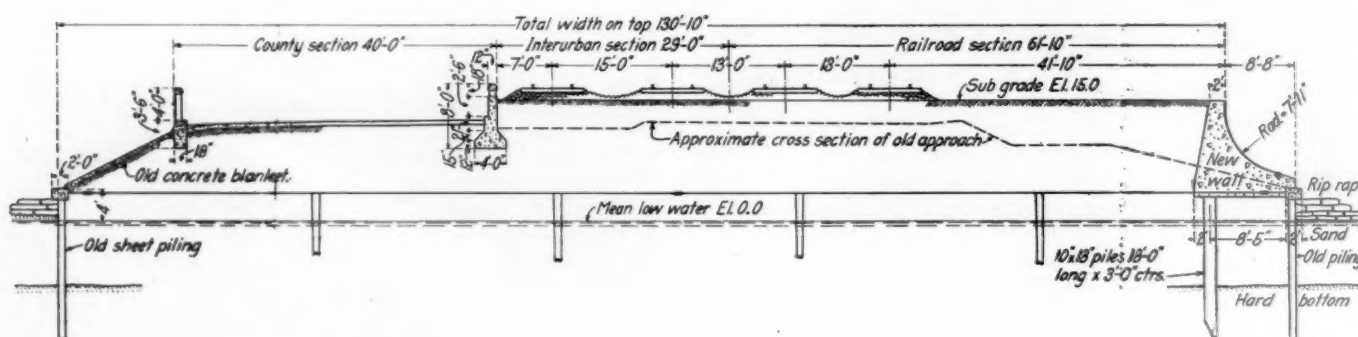
Swain and Lincoln Bush, who were called upon to select one of two competing designs for reconstruction and pass on the adequacy of the waterway which they provided. The design approved by this board provided that the existing arch bridge should be extended each way by providing additional waterways in the form of 51 new arches of 60-ft. span on the Virginia Point end and 28 new arches at the island end.



Galveston Causeway in Relation to Its Surroundings

This left about 100 ft. of approach embankment at the west end and 2,600 ft. at the east end to be repaired or rebuilt.

The work of restoration has proceeded on this basis. The additions to the arch structure have been built to a width accommodating two railway tracks, an interurban track and a 21-ft. driveway, making an overall width of 63 ft. 3 in. to outside of parapets. The arches have a span of 60 ft. and a rise of 12 ft. and the piers have a thickness of 10 ft. The



Typical Section of the East Approach

needed water supply, but this was later replaced by a submarine pipe line. The 30-in. pipe line in the causeway was restored also at a later date. A few months after the storm a pile trestle for a highway was also completed.

#### Restored Structure Provides Greater Waterway

The failure of the large part of the causeway gave conclusive proof that much greater waterway was required and plans for reconstruction were undertaken on this basis but owing to a failure of the various interests to agree on the form of construction to use, the matter was submitted to a board of arbitration, consisting of A. N. Talbot, George F.

highway and railway arches are separated by a smooth joint, the former having a crown thickness of 14 in. and the latter one of 20 in. Each pier was designed to be stable in event of the destruction of either of the adjoining arches. The footings are supported on reinforced concrete piles with the bottom of footing about 10 ft. below low water level. The foundation piles are carried well into clay and the depth of each footing is also varied to some extent to avoid too great a distance between the bottom of the footing and the top of the clay stratum, which is covered by a variable depth of sand. The arches are of the filled spandrel type with a spandrel wall on the two other faces. The highway portion

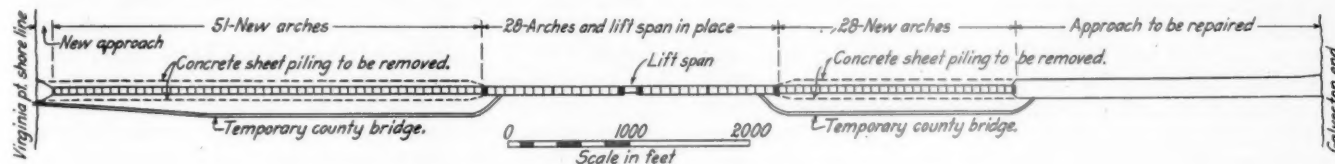


is paved and the railway part is ballasted and laid with three tracks, two of them for the use of steam railroads and one for the electric line.

The embankment reconstruction at the Galveston end involves the restoration of the old concrete protection along the highway side and of the construction of an entirely new form of protection on the railway side, namely, a sea wall of mass construction with a curved face and wide base. The toe of the wall is supported on the existing concrete sheet piling,

conditions by utilizing the space between the two bulkhead walls as a dry working area.

A large part of the operations were conducted by three stiff-leg derricks, mounted on wheels and operated on a gantry track with rails spaced 40 ft. center to center, thus occupying practically all of the space between the bulkhead wall and the face of the arch structure. The first derrick was used to handle a clam shell bucket for excavating the pier sites, all soil being dumped either inside or outside the



How the Original Bridge Was Extended with Additional Arches

while the heel is carried on a row of concrete piles spaced 3 ft. center to center. For this purpose sheet piling taken from the old bulkheads were used, as soon as sufficient of these were removed from the length of causeway occupied by the new arches.

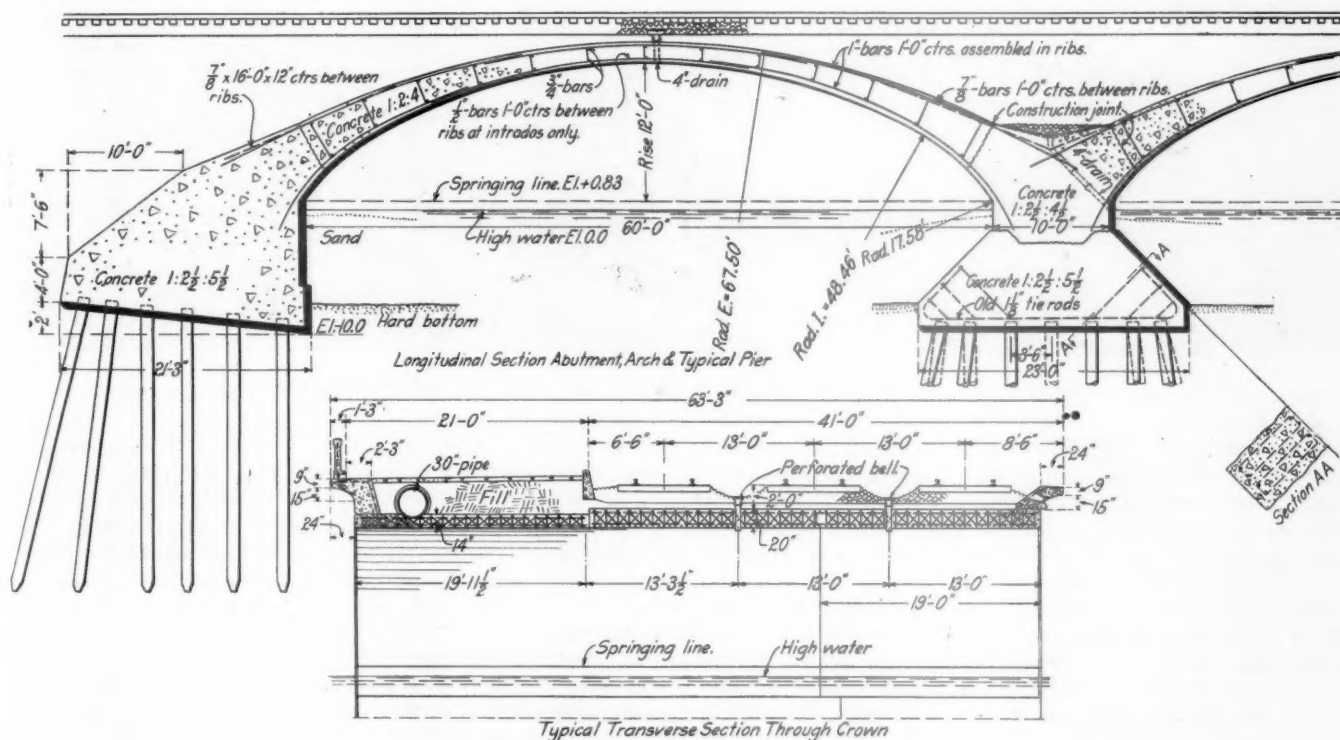
### Construction

Construction was begun September 15, 1917. The program adopted for the work provided for the construction of two-thirds of the arch structure first, namely, all of the high-

bulkhead; the second was used to support a pair of pile driving leads for driving the foundation piles; and the third handled the forms and other operations of the concreting.

### Pile Driving

The concreting was conducted from plants located at the extreme ends of the causeway with a third plant north of the tracks at the Virginia Point end for casting the concrete piles. The length of piles required to give the required penetration into the clay was determined by at least three



Details of the Arch Construction

way portion and sufficient of the railway portion to carry one track (the interurban track). This was followed by the construction of the remaining portion of the arch structure, after which release of the sheet piling in the flanking bulkheads permitted work to proceed on the restoration of the embankment, the only portion of the work now not completed. The additional arches being in two groups, separated by nearly half a mile of the existing arches, naturally divided the work into two units which have been handled by independent plants. The contractor also adapted the work to the local

soundings taken at the site of each pier. The pile casting yard occupied a space large enough to accommodate 200 piles at one time, the piles being allowed to cure not less than 45 days before driving. The mixing plant was located at one end with an elevating tower to deliver the concrete to a traveling hopper which operated over an elevated track placed at a sufficient height so that the concrete could be spouted from the hopper to any form in the yard. A traveler, equipped with two stiff-leg derricks, handled the forms and the concrete piles. The work of manufacturing the concrete

piles was conducted at intervals during the course of the construction whenever the force could be spared for this work, although most of the piles were finished well in advance of the other work. Stone and cement was delivered to the concrete plant in cars for which sidings were provided. The sand was delivered on barges.

At the two concrete plants for the structure proper the concrete was delivered through a spout into cars which hauled it out to the point of placing in the bridge on narrow-gage tracks. The concrete going into the piers was hauled over a track supported on brackets attached to the side of the railroad trestle, from which it could be spouted to any point in the piers. Concrete for the arches and spandrel walls was hauled out in buckets placed on cars moving over a track laid outside the derrick track to a stiff-leg derrick opposite the point of placing, where the buckets were hoisted over and dumped into the forms.

The arch forms consisted of wooden lagging supported by steel centering. The forms, of which 18 sets were provided, were built only wide enough for one-half of the width of the first unit of the bridge constructed. In concreting the arch, the first operation was to pour the pier footing and haunch and follow this with a second run for the arch ring complete

22 per cent; and Galveston County, 33 per cent. The Board of Managers is responsible for the management and financing and the Board of Engineers for the design and construction. The chairmanship of these boards has been vested in turn with the representatives of the various interests, the present chairman of the Board of Managers being G. S. Waid, vice-president and general manager, Southern Pacific Lines, and of the engineering board, H. M. Lull, chief engineer of the Texas and Louisiana Lines of the Southern Pacific. F. G. Pettibone, vice-president and general manager of the Gulf, Colorado & Santa Fe, was chairman of the Board of Managers, and F. Merritt, chief engineer of the same road, was chairman of the board of engineers until May, 1917. A. F. Robinson, bridge engineer of the Santa Fe System, is consulting engineer for the Board of Engineers.

The original estimate for the restoration work was about \$1,500,000, but during the time that the work was in progress the cost of labor increased in such large proportion that the final cost will be much larger. Larkin & Sangster, of Buffalo, N. Y., were the contractors, the contract being awarded on a cost plus basis with an upset price, but the contractors were unable to complete the work within the limit set and it was necessary for the board to take the work out



Moving Out Arch Centers Preparatory to Using Them in a New Position

between the haunches. This required 116 cu. yd. of concrete for the rail section and 75 cu. yd. for the highway portion. After completing the work at one set of arches, the centers were moved out, cut in two at the crown and shifted ahead for use at other arches without removing the lagging.

After the completion of the first unit of work on the arches, a temporary spandrel wall was built along the incomplete side of the railroad arches, the spandrel filling was placed and one track was laid over the new arches and the county highway portion paved with brick on a concrete foundation. As soon as this was placed in service the railway trestle was removed, thereby clearing the space along the Galveston bay side of the bridge so that the arches could be completed. To carry out this portion of the work the plant was transferred over to the other side of the structure and the work prosecuted in much the same way as it was for the first portion.

The work of restoration of the Galveston causeway is conducted by a Board of Managers and a Board of Engineers, representing the interests which bear the expense. These are the Galveston, Harrisburg & San Antonio (Southern Pacific) which bears 15 per cent; the Gulf, Colorado & Santa Fe (Santa Fe), 15 per cent; the Galveston, Houston & Henderson, 15 per cent; the Galveston-Houston Electric Railway,

of their hands, and it was turned over to H. F. Jonas for completion, Mr. Jonas having previously served as supervising engineer representing the board on the ground. William Mueser, consulting engineer of the Concrete Steel Engineering Company, New York City, designed the causeway and prepared the plans and specifications.

NUMEROUS VIOLATIONS of the car service and interchange rules intended to protect freight cars against the attachment of advertisements, having been reported to the American Railway Association, R. H. Aishton, president of the association, has issued a letter to members urging the railroads to enforce these rules. This matter is covered by Car Service Rule 12 (recommended practice) which reads as follows: "The placing of advertisements or placards of any kind by the shippers upon freight cars is prohibited." Interchange Rule 36, which is mandatory by agreement, reads as follows: "Rule 36. Delivering company responsible. Temporary advertisements tacked, glued, pasted, varnished or secured to cars by screws, wire, or any other manner." The penalty is a defect card against the delivering line which permits a charge of one-half hour for the advertisements tacked, screwed or wired to car, and one hour for the advertisements pasted, glued or varnished on cars, the rate per hour being \$1.20.



# Duncan Replies to Charges of Lauck and Warne

A. G. Hagerty, a Washington Lawyer and Former Examiner for  
I. C. C., Also Speaks for Executives

WASHINGTON, D. C.

**I**N CLOSING his statement on May 4 before the Senate Interstate Committee, C. S. Duncan replied to charges made before the committee and elsewhere by W. Jett Lauck, that large financial interests control the railroads and that they deflated the farmers and undertook to deflate labor.

## Farmers Blame Reserve Bank

"There is no contention," said Mr. Duncan, "that the Federal Reserve Bank is controlled by this financial group and yet it is a well-known fact that it is blamed by the farmers for 'deflating' them. It is to be remembered that the automobile industry suffered no less than cotton growers or wool growers or raisers of cattle and grain. Of course, the record is clear that the farmers were not free from the mad spirit of riotous spending and wild speculating of recent years. No financial coterie of bankers saved the most powerful meat packers from tremendous losses through deflation, as shown by their annual reports. And if general reports have a foundation in fact, there was no financial power strong enough to save the large banks themselves from very heavy losses.

The farmers, according to the Joint Commission of Agricultural Inquiry, buy over 30 per cent of the steel products produced and used in this country. Would financiers wantonly kill the goose that lays this golden egg? It is not reasonable to believe so.

"The statement has been made that Wall Street bankers control the policies of the roads, financial and otherwise. But no facts have been advanced to prove it. A more pertinent inquiry is as to the effect upon public welfare of what has been and is being done.

"Mr. Lauck has employed charts and graphs which picture a situation of inter-relationship through directorship between railroads and banks. He has given no concrete facts to prove his conclusions. There remains, therefore, in his argument this broad hiatus between his chart and his conclusion. He has nowhere shown that bankers as directors have exerted a dominant control over politics. He argues solely by inference. I submit that such an argument is neither valid nor conclusive.

## Fictitious Securities and Fixed Charges

"Another witness for railway employees contended that fictitious securities had been made a fixed charge upon the net operating income of the railroads and thus the public was compelled to pay sufficiently high rates to meet such unfair charges. The reply to this contention was, that these charges were not against net railway operating income at all and that rates were based upon two factors unaffected by such charges; namely, the valuation of railroad property for rate making purposes by the Interstate Commerce Commission and the net railway operating income.

"There is no proof given of the further statement that the coterie of financiers had marked labor as its next victim. As to the 'open shop' drive, it is a question of fact and requires proof, not assertion. But it would seem a common sense thing for the banks to desire good business.

"The witness is in error when he says that issues of fictitious securities have imposed a perpetual drain on railroad operating revenues because the securities of the roads do not under the law influence or in any way affect the amount either of operating revenues or net operating income. Unwise financing may continue to be unfortunate for a given railroad cor-

poration but it does not affect the public through rates or the employees through wages."

In concluding the part of his statement in which he replied to Frank J. Warne, statistician for the train service employees, Mr. Duncan said:

"I am convinced that this testimony not only does not prove the contention set forth but also was presented with a view to the effect it would have elsewhere than upon the minds of this committee. That it has been misused in the public forum has been shown. That it does not meet the purpose of the Senate resolution under which the railroad inquiry was instituted is also apparent. That it is not helpful in meeting the present railroad problem has also been made clear. That it tends to engender bad feeling where harmony should prevail, that it is an attempt to discredit railway management and to harm railway credit is likewise evident. It is neither constructive or fair, neither sound nor judicially considered, neither wise nor just. The witness has used his ability as an economist and statistician for the purposes of a partisan and an advocate, and not as a scientist and serious student of business problems."

## The Railway Business Risk

Few, if any, industries face as great a business risk as the railroads of the country under existing conditions, Mr. Duncan, told the committee. Under governmental regulations the carriers as a whole, he said, are restricted in prosperous times from making profits in excess of six per cent on their tentative valuation by which they would be enabled to provide a surplus for lean years, while they have no guarantee of revenue and no protection against financial losses.

"From an economic point of view," said Mr. Duncan, "this is a consideration which ultimately must be given due weight. There are now many regulations and restrictions to prevent the railroads from making high profits, but there is no guarantee of revenue and no protection against losses. In the great uncertainties of traffic revenues, there is a business risk that the railroads are compelled to assume without protection. Investors in railroad property can shoulder the burden of this risk, as compared with other investment opportunities, only if they are given a chance to share in higher return when there is prosperity, as is the case in other industries.

"The time-consuming method of adjustment of rates and expenses in operation today makes quick reaction impossible. It would seem a fair principle that just as regulations restrict the free exercise of managerial judgment, to that extent responsibility must be shared by the powers promulgating the restrictive regulation.

## Capitalization of Social Values

"Farmers, manufacturers, merchants, owners of mines and real estate are permitted to capitalize their exceptional opportunities, such as advantages of location, fundamental human needs for their products—all the so-called social values. Many, however, want to deny all these things to the carriers. To this extent their position is ill-defined and anomalous.

"There has been a great deal of talk about watered stock in connection with the railroads. It should be clearly understood in regard to this subject: first, that railway property is being valued on a basis wholly independent of security issues; second, that this value when arrived at will be used

for rate making purposes; third, that the public will not be made to carry the burden of rates to secure revenues for the realization of a return on any inflated value; fourth, that since 1907 all additions and betterments have gone into the capital account at the value actually expended; fifth, that all issues of securities have been for nearly two years and will for the future be under the supervision of the Interstate Commerce Commission. The public and the investor are thus thoroughly safe-guarded. So far as the railroads' relations to the public are concerned, the 'watered stock' issue has been met."

#### **Says Warne's Charges Should Be Stricken from Record**

Another analysis of the Warne brand of statistics, which were characterized as "fairly screaming with misconceptions," was given the committee on May 6 by Alfred G. Hagerty, a Washington lawyer who was for 12 years an examiner of the Interstate Commerce Commission and who said he had been asked by the railway executives to testify before the committee because of his close association with the development of the uniform system of railroad accounts established by the Interstate Commerce Commission. As so large a part of Mr. Warne's testimony before the committee had been based on the assertion that the statistics based on compilation of railroad reports to the Interstate Commerce Commission are useless and worse because of manipulation and fraudulent accounting, Mr. Hagerty went into a detailed explanation of the accounts and reports and the commission's methods of using and checking them, in relation to the charges made by Mr. Warne.

"The accusations by Mr. Warne that the railroad executives and their statistical staffs have misrepresented the results of railroad operation to the committee, I find to be without foundation," he said.

In reply to general charges of manipulation made by Mr. Warne, Mr. Hagerty cited the fact that in checking the returns of the companies for 1915, 1916 and 1917 for the purpose of certifying the amount of the standard return, the commission had examined the accounts of 478 carriers which resulted in corrections increasing the total standard return by only \$155,766, a difference of less than 2/100 per cent as compared with the reports, and in favor of the railroads rather than in favor of the government. "Bearing in mind that the accounts covered three years," he said, "it seems to me that in the net result we have quite conclusive proof that the railroads of this country are not making false returns to the commission. As a result of these examinations, which were most sweeping and comprehensive, the commission did not find a single instance of manipulation, falsification or fraud on the part of the railway accounting officers. Most of the errors were errors of judgment in the interpretation of the commission's accounting regulations or purely clerical errors."

Mr. Hagerty said that "the most pernicious of Mr. Warne's many unjust accusations" was the alleged manipulation of maintenance charges to conceal the true earnings from the public and that "he bases these accusations upon a statistical compilation of dollars expended from month to month and from year to year without regard to the quantity of maintenance applied or to increases in prices of both labor and materials."

#### **No Manipulation of Maintenance Accounts**

"The same charge was made and almost in the same language," Mr. Hagerty said, "by counsel for certain shippers in the 5 per cent rate case and as the truth or falsity of these charges had an important bearing on the question of the revenue requirements of the carriers the subject was thoroughly investigated and given serious consideration by the commission. In both the 5 per cent and 15 per cent cases the evidence disclosed a tendency toward insufficient

maintenance rather than too much maintenance and in neither case did the commission, after exhaustive investigation, find either overmaintenance or manipulation of maintenance accounts.

"The most unjust and misleading part of Mr. Warne's statement," Mr. Hagerty said, "has general reference to the alleged padding of expenses during federal control and more especially during the six months' guaranty period." Regarding this he said: "His graphic charts are dangerous in deception and likely to influence the uninformed to accept his deductions, inferences and accusations as facts when they fairly scream with misconceptions.

"No such misunderstanding should be left in the minds of the members of this committee," he said, referring to a part of Warne's statement regarding the accounts for the six months' period, "because padding or inflation was neither the intention nor the result."

He pointed out that the commission's officers and the railroad officers had co-operated in working out a method of stating the accounts for this period and added that "to avoid confusion Mr. Warne's statement should be earmarked and stricken from the record."

"If the railway operating returns presented to this committee by the carriers—including revenues, expenses, net revenues and railway operating income—for any given time, are inaccurate, then the reports of the Interstate Commerce Commission to Congress also are inaccurate, which means that the commission is open to the same charges of misrepresentation as that laid by Mr. Warne against railroad officials.

"I say this because, as a whole, the data presented by the railroads are identical with those reported by the commission to Congress."

Mr. Hagerty testified that not only are the various accounts of the carriers "carefully policed and kept free from misuse" by the Interstate Commerce Commission but that their annual reports each year are compared with those of previous years, and if any wide or disproportional difference in any of the items are found an immediate explanation is demanded by the commission.

"Where the situation justifies it, accounting examiners are put to work on the carriers' books," the witness said, "this leaves little or no room for manipulation or falsification, even if the carriers were disposed towards such evil.

"Nothing was done in the dark," said the witness. "There was no purpose or intention on the part of the railway accounting officers to manipulate, falsify or misrepresent. If there has been any misrepresentation to this committee of the operating results, or the ratio of railway operating income to investment, it has been in the efforts of Mr. Warne to confuse and mislead."

Senator Cummins announced during the hearings of Mr. Duncan's testimony that he proposed to insist that the director general of railroads furnish the committee with information showing the amounts allowed, in the various settlements made with railroad companies for the federal control period, on account of under-maintenance. He said it was understood that allowances were being made on this account and that no railroads had thus far been required to pay anything for over-maintenance, although the former director general had estimated that over-maintenance would about balance any under-maintenance. The Railroad Administration had thus far steadfastly declined to furnish such information not only on the ground of policy but also on the ground that when lump sum settlements are agreed upon it is impossible to state definitely the exact items involved.

The hearing was again temporarily postponed with probably four witnesses yet to be heard, including R. S. Lovett of the Union Pacific, L. F. Loree, of the Delaware & Hudson, and one or two representing the National Association of Owners of Railroad Securities.



# Mexican Railways Prepared for Improved Business

Improvements Now Under Way—Labor Conditions—Relations  
With U. S. Lines

Part II\*

By Charles W. Foss

**I**N ADDITION to their acquisitions of new motive power the National Railways of Mexico are also effecting other important improvements, notably with respect to the construction of new lines, the building of new stations, shops, etc.

A new branch line under construction from Allende, Coahuila to Las Vacas (opposite Del Rio, Texas), has just been completed and is in operation as far as San Carlos, which is 18 miles from Del Rio, Texas—a total distance of approximately 40 miles. This is rather an important feature, as its extension to the United States border, when the trunk line is completed to Las Vacas, means the establishment of a connection of the National Railways of Mexico with the Southern Pacific which passes through Del Rio, and eventually with the Kansas City, Mexico & Orient.

## Stations and Shops

When traveling on the main line one is impressed by the large number of new stone stations and groups of section houses. The small stations are simple in design. The section houses which lie along the right-of-way on each side of such stations are usually cubical in shape and of a type of architecture, so lacking in the ordinary trimmings which an American is accustomed to, as to look most unusual. One notices also a considerable number of stone water tanks, although at many points the water facilities are rather crude.

per cent and at Tampico about 20 per cent. The project at Saltillo is estimated to cost about 1,000,000 pesos or \$500,-

## SHOPS ON THE NATIONAL RAILWAYS

	Capacity engines per month	Capacity cars per month	Capacity coaches per month
First Class Shops:			
Aguascalientes .....	20	2,400	400
Monterrey .....	20	3,700	450
Nonoalco .....	20	2,650	1,520
Puebla .....	10	140	20
Second Class Shops:			
Acámbaro .....	8	450	120
Cárdenas .....	4	482	20
Chihuahua .....	6	1,250	150
Doña Cecilia .....	7	400	160
Durango .....	4	490	90
Gómez Palacio .....	4	550	60
Guadalajara .....	8	350	60
Piedras Negras .....	10	1,480	70
Rincon Antonio .....	4	180	35
San Luis .....	12	2,000	280
Tierra Blanca .....	3	40	5
Tonalá .....	4	60	5
Peralvillo .....	4	830	35
San Lázaro .....	4	120	85
Jalapa .....	6	415	20
Oaxaca .....	1	280	140

000 and includes a 30-stall roundhouse and accompanying facilities.

The most important shops of the National Lines are at Aguascalientes, Monterrey, Nonoalco and Puebla. A table is given showing the capacities of these shops and also the



Cathedral and Plaza de Constitucion, Mexico City

In connection with the larger stations, attention should be drawn to the new stations and terminals now being built at Saltillo, Durango and Tampico. The facilities at Saltillo are now about 75 per cent completed; at Durango, about 90

location and capacity of the less important divisional shops. The shops at Aguascalientes are considered the most important on the system. These are at present rebuilding locomotives. In January, 12 locomotives were given general repairs and complete rehabilitation. The executive board of the National Railways has made extensive plans for the improve-

\*Part I of this article was published in the *Railway Age* of May 6, page 1055.

ment of shop facilities. It proposes to enlarge the shops at San Luis Potosi, Saltillo, Aguascalientes, Acambaro and Puebla—adding new buildings and machinery and tools—and to make these the main shops and use the others for division shops. The statement is made with reference to the other shops that they are sufficiently supplied with machinery and tools to care for present requirements.

### Organization

The National Railways of Mexico are headed by an executive board. The actual operation of the railways is in the

STANDARD AND NARROW GAGE MILEAGE OF THE NATIONAL RAILWAYS OF MEXICO BY DIVISIONS

Divisions	Miles Standard Gage	Miles Narrow Gage
Aguascalientes .....	582.8	....
Cárdenas .....	296.8	....
Chihuahua .....	473.4	....
Durango .....	548.7	....
Guadalajara .....	659.9	....
Hidalgo .....	....	162.8
Istmo .....	340.2	....
Jalapa .....	....	274.3
México-Querétaro .....	750.1	....
Monclova .....	413.2	....
Monterrey al Golfo .....	421.7	....
Norte .....	443.4	....
Oaxaca .....	....	365.7
Pacífico .....	248.5	175.0
Pan-Americano .....	284.5	....
Puebla .....	....	439.6
San Luis .....	450.9	....
Tehuantepec .....	188.3	....
Torreón .....	732.5	....
Terminals of México .....	29.0	....
Terminals of Monterrey .....	10.9	....
Terminals of Tampico .....	10.4	....
Grand total .....	6,885.2	1,417.4
		8,302.6

hands of a general manager to whom all departments report except the traffic, accounting, treasury and express. These report directly to the executive board of directors.

### Labor Conditions

Much might be said concerning labor conditions. Prior to the revolution the larger part of the enginemen and con-

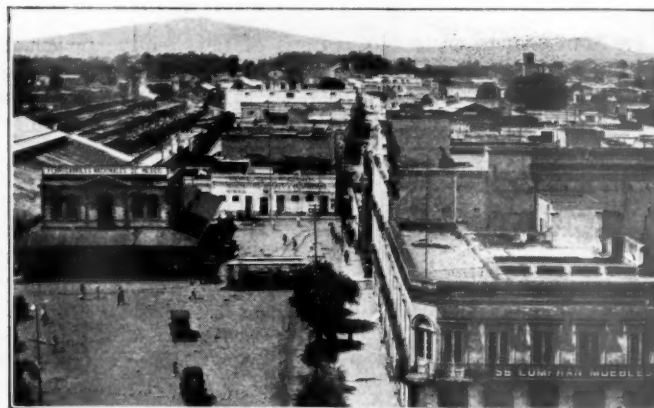


A Business Street in Guadalajara, Mexico's Second City

ductors were Americans; train orders were issued in English. This is not the case today. The operating rank and file is entirely Mexican. The employees are strongly unionized and their power is evidenced by what has already been said about the strike which took place last spring and which ended with a complete victory for the employees, and with complete recognition of the unions and the entire granting of their demands.

Salaries and wages in general run about 75 to 90 per cent

of rates in the States. The United States Labor Board scale is paid, however, to train and engine crews, dispatchers, station agents, operators and shop mechanics. That is, where the rate in the States is 50 cents an hour, the Mexican rate would be one peso an hour. The National Railways are now endeavoring to readjust wages to the same extent as in the United States. With reference to section labor rates per day run about as follows in pesos (one peso is equivalent to about 50 cents U. S.): At the border, \$2.50 to \$3.00; coast,



The National Railways Station at Guadalajara

\$3.00 to \$4.00; central plateau, \$1.50 to \$2.25 and in the tropics, \$2.50 to \$3.00. With the high rates in effect for railway labor, it is quite natural that railroading in Mexico should be regarded as a very desirable occupation by the average citizen.

Opinions vary regarding the efficiency of the Mexican workman. It is fairly generally stated that the Mexican

STATEMENT SHOWING THE LOCOMOTIVES RECENTLY ACQUIRED IN THE UNITED STATES BY THE NATIONAL RAILWAYS OF MEXICO

STANDARD GAGE				
Total	Class	Type	Weight Engine	Purchased From
3	F-22A	Ten-wheel .....	143,300	El Paso & Southwestern
3	M-14	Pacific .....	210,981	El Paso & Southwestern
20	M-15	Pacific .....	256,000	Baldwin Loco. Works
20	G-45	Consolidation .....	166,000	American Loco. Co.
20	G-45	Consolidation .....	166,000	Baldwin Loco. Works
6	G-42	Consolidation .....	71,192	General Equip. Co.
5	K-10	Mikado .....	180,000	Baldwin Loco. Works
8	K-11	Mikado .....	270,000	Baldwin Loco. Works
7	K-11	Mikado .....	270,000	American Loco. Co.
15	K-11	Mikado .....	270,000	Baldwin Loco. Works
57	F-40	Ten-wheel .....	159,394	Illinois Central
30	G-43	Consolidation .....	145,936	Illinois Central
2	G-44	Consolidation .....	192,397	Illinois Central
2	G-44	Consolidation .....	187,454	Illinois Central
198				
NARROW GAGE				
20	G-033	Consolidation .....	110,265	Baldwin Loco. Works
1	G-034	Consolidation .....	84,656	American Loco. Co.
1	D-010	Mogul .....	77,491	American Loco. Co.
22				

	Standard	Narrow Gage
Total engines in service .....	505	102
Total engines in shops .....	...	510

TOTAL NUMBER OF CARS ON THE NATIONAL LINES

Total cars in service.	Box	Refr.	Coal	Stock	Various	Flat	Total
Foreign .....	678	10	89	127	2	18	924
System (standard gage) ..	6,486	29	2,275	677	1,465	1,183	12,115
System (narrow gage) ..	1,295	2	131	152	177	287	2,044
Grand total .....							15,083
Total cars in shops .....							2,910

shop mechanic is painstaking and careful, but slow. It is difficult to measure the comparative efficiency of the train and engine crews; it is a fact, however, that Mexican trainloads are much less than ours. The Mexicans do not get the service out of a locomotive that a United States road would secure.

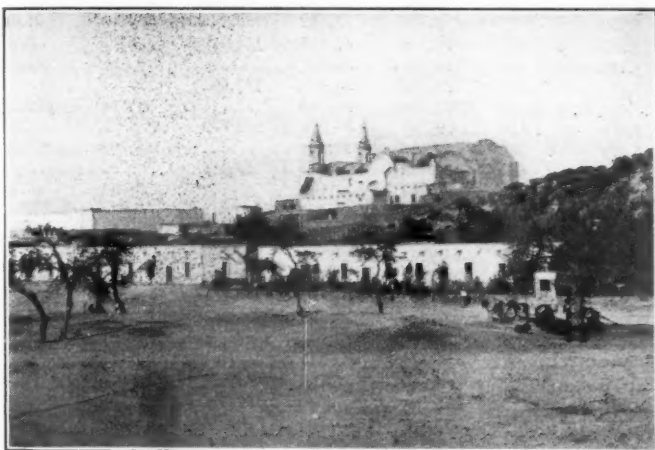


### Passenger Service

The Mexican passenger service, like the freight service, is at present running rather light. Mexico has two classes of passenger traffic, first and second. First-class fares are at a rate of about 3.75 cents (United States currency) per mile and second-class at a rate of about 1.5 cents. As has been noted in the *Railway Age*, through Pullman cars are run over the International & Great Northern from San Antonio to Mexico City and over the Gulf Coast Lines from Houston to Mexico City and Tampico via Matamoros and Monterrey. Dining car service is in the form of a cafe club car run in the one case from San Antonio to Mexico City (the Houston sleeping car is picked up at Monterrey), and in the other from Houston to Tampico.

The service is satisfactory. An American will always find himself in the company of other Americans. No passports are required and almost the only difficulty presented is the inability to secure through tickets across the border. From Nuevo Laredo to Mexico City, 803 miles, requires 36 hours; from Matamoros, slightly longer. An interesting feature is the coach full of soldiers which is carried on every train.

The Mexican railways are endeavoring to encourage the travel of Americans in Mexico. Plans are under way looking



A Scene on the Main Line Between Mexico and Nuevo Laredo

to the publishing of booklets on Mexico for distribution in the United States. President Obregon is understood to be taking a great interest in the matter of relationships with United States business men and several parties have been made up in the southwestern states and carried as the guests of the Mexican government to Mexico City and other parts of the Republic.

### Through Billing Under Consideration

It is the testimony of the American railroad men whose lines connect with the National Railways of Mexico that their relations with the Mexican railway officers have been cordial and satisfactory. The difficulty with interchange business at present is that there is no through billing across the border and that through rates are not quoted. These matters are now being given consideration, although it is too early, as yet, to say what success will attend the negotiations, or how far they will be carried. The American lines have a good realization of the possibilities of Mexican traffic. For example, traffic representatives are maintained in Mexico City by the International & Great Northern (which office also acts for the Missouri Pacific and Texas & Pacific) by the Gulf Coast Lines, by the Missouri, Kansas & Texas, by the Southern Pacific and by the Atchison, Topeka & Santa Fe.

The writer, in conclusion, desires to say that he found the Mexican railway officers whom he met cordial and helpful. They were frank and did not act as if they had anything

to conceal. They talked enthusiastically concerning the good things about their railways, but did not play the part of the censor with the bad. Naturally, things are not done in Mexico in the same manner as they would be done on a railroad in the United States, but one could not help but feel that the Mexican railways are prepared for the revival which we all hope is about to come about in Mexican business conditions.

### Freight Car Loading

WASHINGTON, D. C.

THE NUMBER OF CARS loaded with revenue freight showed a large increase during the week ended April 29 both as compared with the week before and as compared with the corresponding week of the previous year, in spite of the light loading of coal. The total was 758,286 as compared with 721,084 in 1921 and 800,960 in 1920. The previous week the total was 714,088. All classes of commodities except coal showed increases in loading as compared with the corresponding week of the previous year, especially large increases being shown in miscellaneous freight and merchandise l.c.l.

Coal loading also showed an increase of 12,000 cars as compared with the preceding week. If coal loading had been normal, the total loading would have been considerably in excess of that of 1920 at the time when the roads were just recovering from the switchmen's strike. The summary as compiled by the Car Service Division of the American Railway Association is given in the table appearing in the middle of the next page.

In a series of charts issued by the Car Service Division there is shown by circular diagrams a comparison of revenue freight loading by totals, by detailed classifications, and by districts, of the entire United States for the period January 1 to April 8, 1922 and 1921. The outstanding fact of the total loading is the comparative increase in the Eastern, Allegheny and Pocahontas Districts in 1922 compared with the previous years, with a converse situation in the Southern and Western Districts. A survey of the various charts for each of the different commodities displays some interesting facts contributing to the comparative result of the total. Thus, in the great grain originating districts (the Northwestern, Central Western and Southwestern) the 1922 loading is comparatively less of grain and grain products than the loading of the same commodities in 1921. The other large item of agricultural tonnage, livestock, shows a similar situation in the Central Western District, which loads the largest proportion of this commodity, although in the Northwestern and Southwestern Districts, slight gains were made.

Peculiarly, despite the increase of total loading in the Eastern and Allegheny Districts, coal and coke loading was relatively lighter in 1922 than in the previous year. To the contrary, there is a heavy relative increase in the Pocahontas District. To a considerable extent, the coal loading in the Eastern and Allegheny Districts is competitive with that loaded in the Pocahontas District, and the conclusion would therefore seem to be that the increase in Pocahontas production was at the expense of production in the Eastern and Allegheny Districts. This is accentuated by the fact that the period covered includes the first week of the present bituminous and anthracite miners' strike during which relatively greater coal production has been lost in the Eastern and Allegheny regions than in the Pocahontas region, where loading has continued much more nearly normal.

The outstanding feature of the forest products loading is a very heavy increase in the Southern District and a somewhat lighter increase in the Central Western and Southwestern Districts. These include the entire Southern and Southwestern lumber loading lines, and the figures would seem to indicate a relatively heavier movement of this lumber

in 1922 than in 1921. Contemporaneously the Northwestern District, a heavy producer, and also the Eastern, Allegheny and Pocahontas Districts, all suffered a relative decrease.

The record of ore loading is of particular note because of the extraordinarily heavy decline in 1922 compared with 1921. Ore loading as a whole, however, is usually at a very low ebb during this particular period, and the movement is not of sufficient volume to permit deductions from the relative showing of the different districts in the two years.

The loading of merchandise l.c.l. and miscellaneous revenue freight shows a very significant upward trend in the Eastern, Allegheny and Pocahontas Districts. In these three, which originate much of this class of freight the 1922 per-

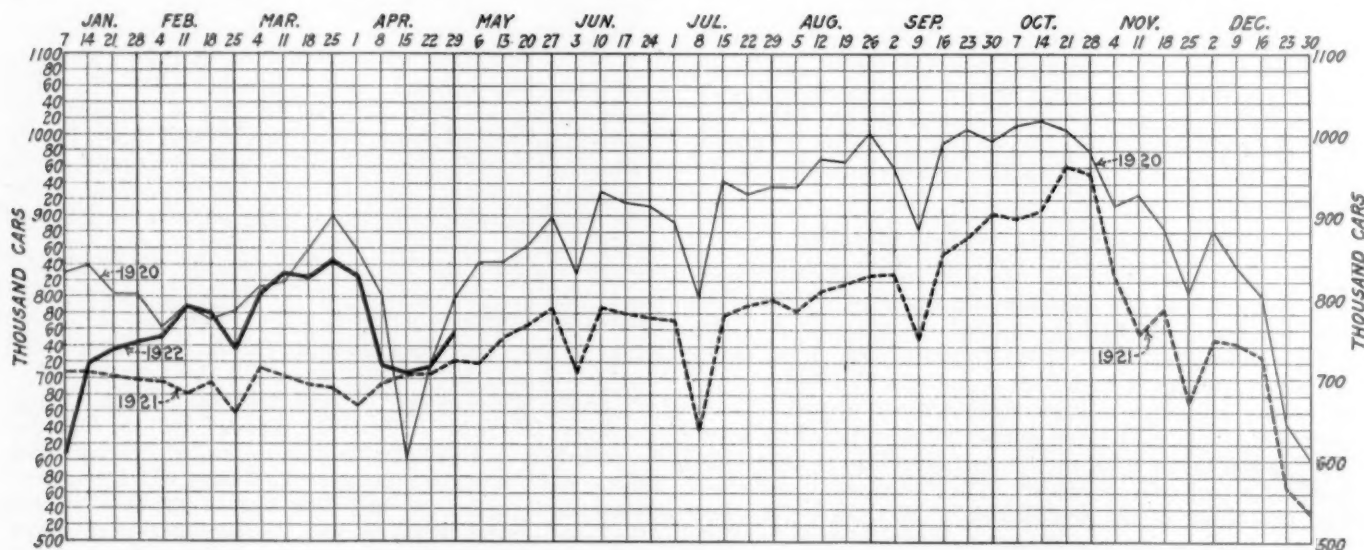
The number of surplus freight cars during the week ending April 30 showed a decrease of 126 to 371,538. This included 235,077 surplus coal cars, an increase of 5,185 within the week and 94,653 surplus box cars, a decrease of 3,753. There is also a decrease in the surplus of stock and miscellaneous freight cars.

A SERIES OF LECTURES on the electrification of the Chicago, Milwaukee & St. Paul is being conducted by the mechanical department of that railroad at a number of colleges and universities throughout the country. The lectures are illustrated by lantern slides and also by over 2,000 ft. of moving picture film, and,

#### REVENUE FREIGHT LOADED AND RECEIVED FROM CONNECTIONS

SUMMARY—ALL DISTRICTS, COMPARISON OF TOTALS THIS YEAR, LAST YEAR, TWO YEARS AGO. WEEK ENDED SATURDAY, APRIL 29

Districts	Year	Grain and grain products	Live stock	Coal	Coke	Forest products	Ore	Mdse. L.C.L.	Miscellaneous	Total revenue freight loaded		
										This year, 1922	Corresponding year, 1921	Corresponding year, 1920
Eastern .....	1922	6,749	2,991	7,616	1,258	5,441	1,408	69,431	83,427	178,321	.....	.....
	1921	6,400	2,733	39,420	901	5,589	889	57,351	65,610	.....	178,893	183,650
Allegheny .....	1922	2,110	2,747	12,733	4,163	2,667	2,574	50,892	66,567	144,453	.....	.....
	1921	2,271	2,972	43,415	2,392	2,324	949	43,265	46,569	.....	144,157	167,099
Pocahontas .....	1922	190	82	26,565	241	1,344	32	6,163	4,469	39,086	.....	.....
	1921	118	86	18,996	197	1,253	25	5,326	3,812	.....	29,813	28,667
Southern .....	1922	3,302	2,190	19,457	564	19,213	816	37,530	42,938	126,010	.....	.....
	1921	2,967	1,889	18,386	552	14,554	816	35,238	35,812	.....	110,214	127,347
Northwestern .....	1922	10,012	8,224	4,241	1,411	17,811	6,807	30,265	34,831	113,602	.....	.....
	1921	8,057	8,230	3,785	445	13,035	3,650	27,220	29,392	.....	93,814	122,340
Central Western .....	1922	10,071	11,505	3,669	167	5,473	1,734	32,796	37,564	102,979	.....	.....
	1921	9,856	11,426	15,426	158	5,479	786	31,068	32,504	.....	106,703	111,593
Southwestern .....	1922	3,964	2,749	1,351	148	7,163	682	15,488	22,290	53,835	.....	.....
	1921	4,428	2,391	4,432	132	5,851	661	16,719	22,876	.....	57,490	60,264
Total Western Dists..	1922	24,047	22,478	9,261	1,726	30,447	9,223	78,549	94,685	270,416	.....	.....
	1921	22,341	22,047	23,643	735	24,365	5,097	75,007	84,772	.....	258,007	294,197
Total all roads .....	1922	36,398	30,488	75,632	7,952	59,112	14,053	242,565	292,086	758,286	.....	.....
	1921	34,097	29,727	143,860	4,777	48,085	7,776	216,187	236,575	.....	721,084	800,960
Increase compared....	1921	2,301	761	.....	3,175	11,027	6,277	26,378	55,511	37,202	.....	.....
	1920	.....	.....	68,228	.....	.....	.....	.....	.....	.....	.....	.....
Decrease compared....	1921	.....	103	.....	.....	.....	.....	91,324	.....	.....	.....	.....
	1920	.....	.....	93,086	2,990	7,327	14,761	.....	22,813	42,674	.....	.....
April 29, .....	1922	36,398	30,488	75,632	7,952	59,112	14,053	242,565	292,086	758,286	721,084	800,960
April 22, .....	1922	33,271	28,114	63,445	7,609	55,859	9,770	239,484	276,536	714,088	704,632	717,772
April 15, .....	1922	29,869	25,014	62,851	8,072	54,905	7,164	244,228	274,610	706,713	702,116	601,695
April 8, .....	1922	31,598	25,024	69,456	8,599	54,680	8,259	243,718	272,934	714,268	694,881	801,559
April 1, .....	1922	35,034	25,935	184,952	10,652	54,016	5,811	241,037	269,574	827,011	663,171	858,827



Revenue Freight Car Loadings Up to April 29, 1922

centage of the entire country's loading, was 50.9 against 46.9 the year before. Contemporaneously, all other districts suffered a decline, this being particularly marked in Central Western territory.

while given primarily for engineering students and faculty, they are open to all who are interested in the subject. Supplementary dates are also being arranged, on application, for addresses before other organizations in the vicinity of the schools.



# Delaware & Hudson Earns 11.62 Per Cent on Stock

Gross in 1921 Exceeds 1920 Figure in Spite of Sharp Reduction in Tonnage—More Coal Carried

THE DELAWARE & HUDSON'S net income available for dividends for the year ended December 31, 1921, was \$4,937,452 as compared with \$4,933,163 in 1920. The 1921 net income was equal to 11.62 per cent on the capital stock; the 1920 net to 11.61 per cent. In 1920 the carrier's corporate income account included standard return for two months and guaranty for six. In 1921, operating on its own, the road was able to obtain approximately the same net income because of an increase, as compared with 1920, of \$422,561 in operating revenues, a decrease of \$3,300,801 in operating expenses, a marked increase in receipts for car hire and increases also in dividend and miscellaneous income.

The Delaware & Hudson was fortunate in 1921 in being able to secure an increase in operating revenues over 1920. It is one of the small list of roads which will show a similar result. Its being able to secure that result permitted it to realize on its economies in the way of reduced expenses, which reductions were due to decreased wages costs, improved efficiency in operation, etc.; there is no evidence, however, that the reduction in expenses was due to cuts in maintenance.

## Freight Revenues Increased 1.08 Per Cent.

The total operating revenues in 1921 were \$45,776,859 as compared with \$45,354,299 in 1920. There was an increase of 1.08 per cent in freight receipts. This was due to an increased rate per ton-mile, the ton-mile earnings in 1921 being 1.236 cents, or 0.318 cents more than in 1920. There was an actual reduction in ton-miles of 24.90 per cent, the 1921 figure being 3,203,759,305 as compared with the 1920 total of 4,265,734,874. The decrease in freight movement was most marked in bituminous coal, iron ore and its products, clay, gravel, sandstone, pulpwood, lumber and general manufactures. There was, however, a substantial increase in the tonnage of anthracite coal. The Delaware & Hudson shows separately its revenues derived from the transportation of merchandise and those from coal. These figures show that in 1921 the revenues from merchandise were \$2,779,608 less than in 1920, but that in the case of coal there was an increase over 1920 of \$3,201,912. Coal transportation revenues in 1921 totaled \$24,876,089, or 54.93 per cent of the total transportation revenues. This percentage in 1920 was 48.38 per cent.

## Largest Anthracite Tonnage in History

This improvement in coal transportation revenues was partly due to an increase in earnings per ton-mile. There

was, however, an actual increase in coal tonnage. This can be put on a mined basis, or on a carried basis. The anthracite coal produced by companies affiliated with the Delaware & Hudson Company during 1921, including the product of washeries, totaled 9,122,408 long tons, an increase of 1,033,226 tons or 12.77 per cent above 1920. This output was 13.01 per cent of the year's total production of all Pennsylvania anthracite mines and washeries, estimated at 70,117,000. The real news in these figures is that the total anthracite production in the state of Pennsylvania was 1.5 per cent below 1920, but that the D. & H. production was 12.77 per cent over its 1920 figure.

The favorable circumstances which enabled the D. & H. affiliated companies to increase their production, while the other collieries suffered a reduction in production, are further shown in the coal transportation figures. The anthracite coal carried by the D. & H. in 1921 totaled 13,007,505 net tons as compared with 12,388,943 net tons in 1920. There was an increase of 618,562 net tons in 1921 as compared with 1920; but there was an increase of 2,527,352 tons as compared with the annual average for the test period, or the three years ended June 30, 1917.

The Delaware & Hudson annual report gives some extremely interesting and useful comparisons of one kind and another with previous years. One of these is in the form of a table showing the classified commodity tonnage for the years 1912 to 1921. This table shows that the total tonnage of all commodities in 1912 was 20,824,568; in 1921, 25,310,664, an increase in these years of 4,486,096 tons. The coal tonnage in 1912 was 8,009,596, in 1921, as above noted, 13,007,505, an increase of 4,997,909. The 1921 tonnage of all commodities has been exceeded in various former years, notably 1920, 1918 and 1917. The anthracite coal tonnage carried in 1921 was the greatest in the company's history; in fact, each succeeding year in this period has shown an increase over the preceding year with a single exception—1916. The result, therefore, is that the increase in total tonnage for 1921 over 1920 is entirely in anthracite coal.

We believe these facts to be important for a number of reasons. They indicate, first, a growing relative importance of the D. & H. in the anthracite coal carrying business. Second, they serve to emphasize that the D. & H., in a measure, lacks that trunk line character of such roads as the Lackawanna or Lehigh Valley, which is natural in view of the fact that the D. & H. does not have one of the through routes between New York and the Niagara frontier. Third, they

FREIGHT TRAFFIC STATISTICS—YEAR 1921 COMPARED WITH 1920 AND AVERAGE PER ANNUM FOR TEST PERIOD

Items	Year 1921	Comparison with 1920		Comparison with average per annum for test period (July 1, 1914 to June 30, 1917)	
		2 Months federal control	6 Months guaranty period	4 Months private operation	
		Increase	Decrease	Increase	Decrease
Mileage operated	908.25				
Number of tons carried (revenue freight)	23,304,775		3,956,038	542,220	
Number of tons carried one mile (revenue freight)	3,203,759,305		1,061,975,569		25,973,423
Number of tons carried per mile of road (revenue freight)	25,659		4,328	609	
Number of tons carried one mile per mile of road (revenue freight)	3,527,393		1,164,863		26,954
Average distance each ton was carried, miles (revenue freight)	137.47		19.01		4.42
Total freight revenue	\$39,585,947.50	\$422,303.97		\$18,470,138.68	
Per cent of total revenue	86.48	.13		3.59	
Average amount received for each ton of freight	\$1.69862	\$ .26199		\$ .77096	
Average revenue per ton per mile	\$ .01236	\$ .00318		\$ .00582	
Freight revenue per mile of road operated	\$43,584.86	\$505.28		\$20,346.71	
Freight revenue per revenue freight train mile	\$9.301	\$1.574		\$5.072	
Loaded cars in each train	24.29		.59	.87	
Empty cars in each train	15.77	3.44		3.94	
Tons to each loaded car (revenue freight)	30.98		2.85	3.35	
Tons to each loaded and empty car (revenue freight)	18.79		3.83	4.44	
Train loads in tons (revenue freight)	752.74		98.85	105.82	
Revenue freight train mileage	4,256,137		812,549		736,347
Revenue freight train mileage per mile of road	4,686		890		808

show how important is anthracite coal to the D. & H. and indicate that the road is likely to be hit rather severely by the present 100 per cent tie-up in anthracite coal mining.

#### Operating Expenses Reduced \$3,300,801, Principally in Transportation

The Delaware & Hudson's operating expenses in 1921 totaled \$38,825,529 as compared with \$42,126,330 in 1920; in other words, there was a reduction of \$3,300,801. The way in which this was accomplished is of special interest. There was not a decrease in maintenance expenses but an increase. Maintenance of way and structures increased in 1921 over 1920, \$395,082, and maintenance of equipment, \$64,216. The savings were made in transportation expenses, which totaled \$17,880,423, representing a reduction from 1920 of \$3,789,245.

The expenses for maintenance of way in 1921 were 7.72 per cent over 1920. The principal reason for the increase was the putting in track of 2,866 tons more rail and 112,418 more ties than were put in in 1920, the expenses relative to ties and rail being increased \$806,505; other track materials and maintenance of interlockers and signals added \$322,063. There were, of course, decreases in labor and material costs which partly balanced these increases.

Expenses for maintenance of equipment were \$64,216, or 0.5 per cent over 1920. The Delaware & Hudson reported on April 15, 1922, bad order cars totaling 7.1 per cent of its cars on line as compared with the country's average of 13.9 per cent. Unserviceable locomotives totaled on the same date 10.4 per cent, one of the lowest percentages of any road. During the year the road broke up 900 cars, resulting in an increase in \$757,757 in the item of retirements of freight cars.

#### 17.49 Per Cent Decrease in Transportation

The reduction in transportation expenses was, as noted, \$3,789,245—17.49 per cent. This decrease was due to lower wages and fuel costs, etc., and to improved operation. The revenue train load in 1921 was 752.74 tons, or 88.85 tons more than in 1920. The annual report points out that there were increases in the gross freight train loads northbound in the heavy tonnage districts. We quote from the report: "The average gross freight train load from Carbondale was 3,765 tons, an increase of 486 tons or 12.9 per cent, and from Oneonta it was 3,601 tons, an increase of 413 tons or 11.5 per cent. The average delay to cars passing through yards was reduced from 11 hr. 42 min. in 1920 to 8 hr. 35 min. in 1921, or 26.5 per cent."

Although not a matter reflected in the operating expenses, attention should be drawn to the improvement in the D. & H.'s per diem situation which took place during the year. In 1920 the road had a debit hire of freight car balance of \$79,556; in 1921 it had a credit balance of \$915,595, an improvement of \$955,151. This evidently reflects in large measure the success of the efforts this road has been devoting to this most important factor.

#### Additions and Betterments

The annual report shows a sizable list of additions and betterments made during the year. The most important item is the new third track between Schenevus and Richmondville Summit, an important link in the Susquehanna division grade revision work. This was completed for operation on December 7, 1921; the total amount charged to capital was \$1,500,574. Other items included grade changes and track realignment between Cobleskill and Barnerville Summit, the remodelled and enlarged roundhouse at Oneonta now completed, etc.

The Delaware & Hudson annual report is to be commended because of the wealth of figures it gives relative to previous years' operations. Times change so rapidly that comparisons

between one year and the preceding year too often give only a distorted and wholly incomplete picture. The Delaware & Hudson report overcomes this factor by giving in a readily comparable form the complete figures for the preceding year and also for the test period from July 1, 1914, to June 30, 1917. As an illustration the freight traffic statistics are reproduced in this review. They give some interesting comparisons.

### Labor Board Appeals Adverse Court Decision

THE DECISION of Judge George T. Page of the United States District Court at Chicago, upholding the Pennsylvania in its controversy with the Railroad Labor Board, and abstracted in the *Railway Age* of April 29, page 1021, has been appealed by the board and hearings in the Circuit Court of Appeals at Chicago have been set for June 2. This action follows the conference recently held at Washington between Attorney General Daugherty and Solicitor General J. S. Beck and Chairman W. E. Hooper and Judge R. M. Barton of the board and indicates that the controversy will be settled in the courts rather than by changes in the Transportation Act itself.

#### Court Makes Pennsylvania Injunction Permanent

The court order issued by Judge Page following hearings in this case, which have been described in previous issues of the *Railway Age*, perpetually enjoins the board from:

"(1) Assuming any authority or taking any action of any kind or character under Section 301 of the Transportation Act, unless and until there has been a joint submission of the dispute by the carrier and the employees, which has been the subject matter of conference between them. Upon such joint submission the board may proceed to hear and determine disputes only under and in accordance with the general provisions of Title III of the Transportation Act.

"(2) From making publication of any matter based on action taken by the board not in harmony with Item 1 hereof."

#### Chairman Hooper Discusses Federal Court's Ruling

The attitude of the Labor Board toward Judge Page's decision is outlined in a memorandum prepared by Chairman Hooper. This memorandum says in part:

The judge held, in substance, as follows:

1. That Congress had the constitutional right to confer upon the board the power to render decisions that would have the binding force of decrees, and to fix wages and working conditions that would be enforceable.

2. That Congress had not, in fact, conferred such power in the Transportation Act, but had only empowered the board to render decisions that are merely advisory and with no provision for their enforcement, except the persuasive power of public opinion.

3. The court did not hold, as has been stated in a portion of the press, that no dispute could be brought before the board, except by the joint submission of the parties.

The court did hold, however, that some disputes could be brought before the board only by joint submission, and that certain other disputes might be brought to the board by either party upon an *ex parte* submission.

The court held that the Pennsylvania dispute as to how the representatives of the shop crafts should be selected to negotiate with the carrier a revision of rules was a dispute that could be brought before the board only by joint submission, and that it was not properly before the board on the *ex parte* submission of the employees. The court held that the board's decision was invalid, that the board would not be permitted to issue a decision censuring the carrier for violating said invalid decision and that the board's motion to dismiss the carrier's bill must be denied.

Of course, the practical result of this holding is that when a conference is sought to be held in regard to a disputed rule or other question, either party may bring about a preliminary dispute that will prevent a conference; that this preliminary dispute



may be withheld from submission to the board by the refusal of one party to join in the submission; and that the original dispute as to rules or wages will thus be kept from the board.

It may be truly said that this would not often happen, but the fact remains that, in the present case, it has happened and that in connection with a question affecting the entire schedule of rules for an army of employees.

This decision permits the Pennsylvania to set up a schedule of rules negotiated with a minority of its shop craft employees, contrary to the letter and spirit of the Transportation Act.

With all due respect to the learned court, the construction of the statute to the effect that the submission to the board of the dispute in this case or any other dispute between the carrier and its employees growing out of their relationship as such, must be a joint submission is strained and unnatural.

Section 301 provides for the conferences to be held between the representatives of the carrier and the representatives of the employees for the adjustment of any dispute that may arise.

Sections 307 (a) and 307 (b) provide the methods of submitting disputes to the Labor Board, after the conference has failed to effect an agreement.

These two sections must be considered together.

Section 301 does not prescribe the manner or method of submitting disputes to the board. It does say that "if any dispute is not decided in such conference it shall be referred by the parties thereto to the board," etc.

This is a mandatory provision. It directs that any dispute not decided in such conference shall be submitted to the board. No choice or discretion is left to the carrier and the employees as to whether any dispute shall be taken before the board. The taking of any dispute not decided in conference to the board is imperative and is not made subject to defeat by the whim of either party by requiring a joint submission. The mere fact that Section 301 says that the dispute shall be referred to the board "by the parties thereto" should not be strained to mean a joint reference by the parties, in view of the fact that Section 301 is dealing with conferences between the parties and that Section 307-a and Section 307-b specifically prescribed the manner of making submissions to the board.

Sections 307 (a) and 307 (b) provide the methods of submitting disputes involving grievances, rules and working conditions.

Section 307 (b) defines the method of bringing before the board disputes with respect to wages and salaries.

It is evident that these two sections are intended to cover any and every dispute that may arise between carriers and their employees and all that are covered by Section 301.

It is quite unreasonable to suppose that the act intends to exclude from Sections 307 (a) and 307 (b) any manner of dispute whatever, when no such intimation is given by its language and when no provision is anywhere made for a joint submission of a dispute.

There can be no dispute growing out of the contract relations of a carrier and its employees that does not arise either from rules, wages or grievances. The dispute in question arose from the general dispute in regard to the revision of rules and it directly involved the particular rule as to the conduct of conferences and negotiations. The Transportation Act guaranteed to the employees the right to select their representatives to negotiate for them in the proposed conference, and it became necessary to have a rule of some sort prescribing a method for the selection of such representatives. It was upon this rule that the dispute arose which came to the board. Before and since the passage of the Transportation Act, it has been customary for the schedules of rules agreed upon between carriers and their various classes of employees to contain rules regulating the manner and procedure for changing or revising the rules. It is also a matter of common knowledge that serious disputes sometimes arise in regard to rules that do not directly, but only incidentally, affect a question of wages or working conditions.

The present docket of the Labor Board is comparatively clear and it is planned to go into executive session for some time to dispose of the important contract cases and wage reduction disputes, hearings on all of which have been completed.

#### Repair Shop Contracts on the Katy

Hearing on the question of contracts entered into by the Missouri, Kansas & Texas, for the repair of equipment in shops at Sedalia, Mo., Parsons, Kan., and Dennison, Tex., was held before the Labor Board on May 4. The board took jurisdiction over the dispute as one likely to interrupt commerce, on the prayer of the railway employees' department of the American Federation of Labor. A repetition of the argument made at the time the board consented to review

the affair constituted the case of the union at the hearing.

The M. K. & T., it was alleged, contracted for work in its own shops with the A. S. Hecker Co. of Cleveland, the new arrangement to begin April 24. All men hitherto employed by the carrier in those shops were to be discharged and rehired, so far as possible, by the contracting company. The employees pointed out that that would mean the loss of seniority, free transportation and hospital benefits, all of which the carrier admitted, saying only that those things were beyond its control.

W. E. Williams, assistant to the chief operating officer for the M. K. & T., asked that the board dismiss the case. He said the dispute could not be called one likely to interrupt commerce because the shops in question had been closed since January 1, 1922, and because, in spite of that fact, the railroad had been rendering satisfactory service. It could not be supposed, he said, that the few days necessary for the contractor to hire men to fill the places of those who might strike would cause the railroad any major inconvenience. Over 400 men, he said, which were all that were needed, had already signed with the contractors for employment at the Sedalia shops.

#### White Gasoline Rail Car

A NEW DESIGN of gasoline propelled motor passenger car, having a seating capacity for 41 persons and a baggage compartment, has been developed by the White Company, Cleveland, Ohio. The first car of this type, built for the Union Transportation Company, recently made a demonstration trip over the Pennsylvania Railroad from Philadelphia to Washington, where it was on exhibition during the annual meeting of the American Short Line Railroad Association. The car made daily runs during the



Interior of the Passenger Compartment

convention over the tracks of the Washington & Old Dominion Railway, carrying as passengers representatives of the various short line roads.

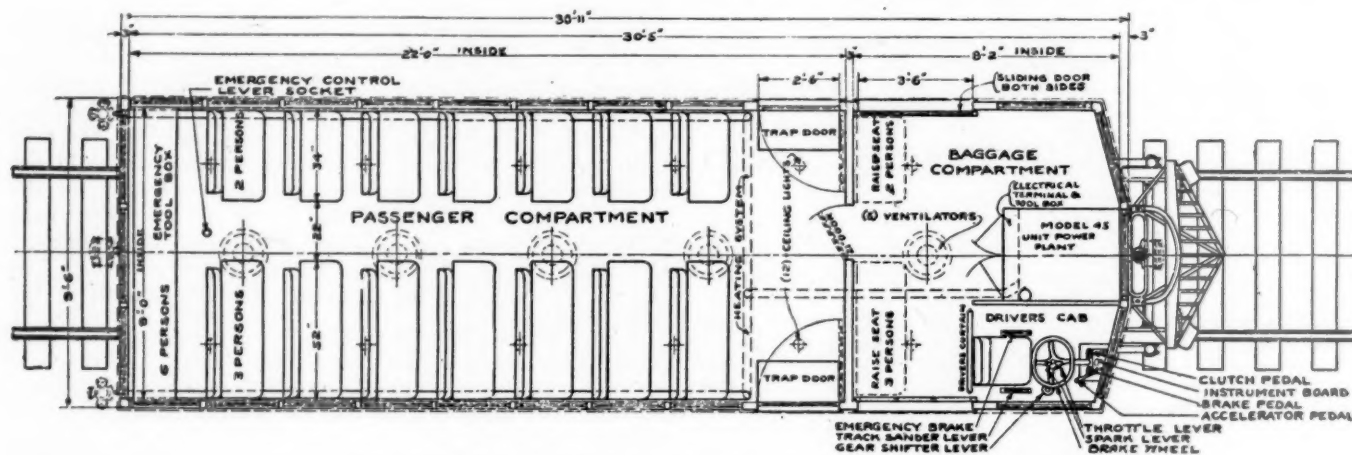
The trips over the Great Falls division of the Washington & Old Dominion were considered a severe test for the car as the road is a succession of grades and curves, the grades running as high as  $3\frac{1}{2}$  to 4 per cent and the curves up to 10 deg. The car ascended the grades with ease and a fair speed was maintained even under the most severe conditions. To demonstrate its reserve power the car was brought to a stop on some of the heaviest grades and again started. Under these conditions it accelerated readily and continued to the top of the grades without difficulty.

The new White gasoline rail car has a seating capacity

of 41, with a baggage compartment directly in the rear of the driver who controls the car from the right hand side. The body is of semi-steel construction built by the J. G. Brill Company, Philadelphia. It is mounted on a specially designed White rail car chassis with an I-beam frame. The car has a four-wheel pivotal truck in front and two driving wheels in the rear. It is designed for a speed of 33 miles an hour. This speed was maintained with ease on the

After being exhibited at Washington, the rail car was placed in operation on the line of the Union Transportation Company on a 25-mile run between Pemberton, N. J., and Hightstown.

This same company placed a 29-passenger rail car in service several months ago and its successful operation led to the purchase of the second car of larger capacity. The experience of the Union Transportation Company shows that



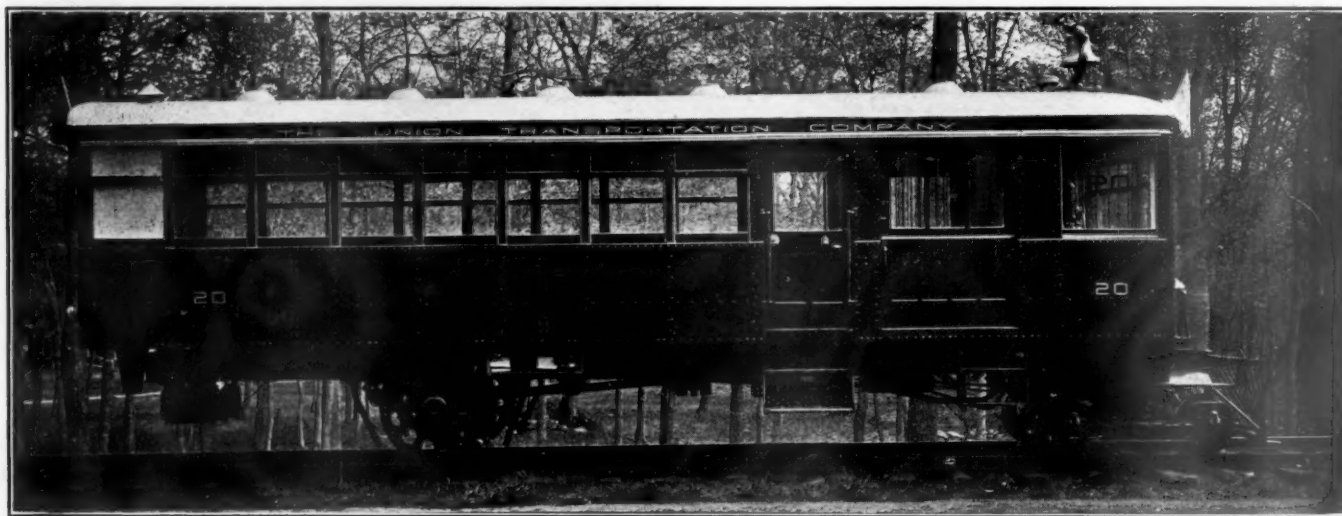
Floor Plan of the Car, Showing Arrangement of Compartments and Controls

demonstration run. The speed in reverse is 9 miles an hour.

The motor and transmission are identical with those used in the White motor truck, the engine, clutch and transmission being embodied in a unit power plant. The engine has four cylinders, cast "en bloc," with a 4¼-in. bore and a 5¾-in. stroke. The transmission is of the selective type with three speeds forward and one in reverse. The operating controls are located on the extreme forward right hand side of the coach. The foot throttle, clutch and drive shaft brakes are operated by pedals. The rear wheel brake and sander mechanism are controlled by levers and the brakes

passengers prefer to ride in gasoline rail cars rather than in steam trains. For this reason the gasoline rail car has been adopted because it offers an opportunity of giving more frequent service at a cost far below that resulting from the operation of short steam trains.

VERY VARIED VALUES.—Interesting examples of unusual sources from which scrap can be reclaimed are furnished by the practice of the Southern Pacific at its central reclamation plant. Sealing wax is obtained from worn-out dry cells; tin drinking cups



Exterior View of the White Rail Coach

on the pivotal truck by a hand wheel. Means are provided in the rear of the coach to disengage the clutch and apply the brakes in emergency. The rear axle has double reduction gear drive. The gears are entirely enclosed and run in oil. The rear wheels are of cast steel with locomotive type steel flanges and annular ball bearings. The seating arrangement and general dimensions of the body are shown in the drawing.

and grease cans are made from coffee cans; scrap boiler tubes are threaded or welded and used for water drain lines, air lines and conduits; old shovel blades are made into washers; parlene, a by-product of Pintsch gas plants, is used for painting the underframes of cars; scrap rope is unwound and used for binding company shipments instead of twine; sediment from acetylene generators is used in place of lime for whitewashing and in the company's steel foundry.



# C. M. & St. P. Deficit After Charges \$11,070,609

## Improves Position Nevertheless by Acquisition of New Lines and Large Amount of Equipment

THE YEAR 1922 PROVED an extremely arduous one for the Chicago, Milwaukee & St. Paul. The final result was a deficit after fixed charges of \$11,070,609. In 1920 the system had a net after fixed charges of \$4,366,071, but in 1920 the road had the advantage of standard return for two months and guaranty for six.

The St. Paul's troubles in recent years have been many. They were evidenced in striking fashion during federal control as is shown by the fact that whereas the property had a standard return of about \$28,000,000, it earned for the government in 1918 a net railway operating income of not quite \$4,000,000, and in 1919 only slightly over \$3,000,000. For 1920 it reported a deficit of \$15,000,000, which had to be made up partly by standard return and guaranty. For 1921 it reported in its December statement to the Interstate Commerce Commission a net railway operating income, or net after rentals, of \$5,117,329, an improvement over 1920, but by no means a sufficient one to keep the corporate net after fixed charges from showing a figure in red of \$11,070,609, as noted above.

Readers of the *Railway Age* are familiar with the St. Paul's outstanding difficulties. They have resulted in great measure from its former policy of over-expansion, the two most important factors of which were its building of the Chicago, Milwaukee & Puget Sound line to the Pacific Coast, and its electrification. It is now generally admitted that both of these projects were carried out away ahead of the demands of traffic. On the other hand, it is also now beginning to be realized that the St. Paul will probably be able to realize on its Puget Sound extension and its electrification as business increases sufficiently. The Puget Sound extension puts the road in a position to handle more business, and gives it an outlet to the west. Electrification will presumably put it in a position to handle this business more efficiently, and the savings in fuel costs will be considerable and important. It still remains the fact, nevertheless, that the St. Paul has thus far not had this increase in traffic, or, to be more exact, the desired increase in traffic density. The increased costs under federal control and the period immediately following, and also the falling off in business in 1921, which for the St. Paul was very severe, therefore, had to be met while the property was still handicapped by having to carry the costs of its greatly increased investment. The result we have seen in the figures which have been given above. Nor is it yet evident that conditions have changed sufficiently in the St. Paul's territory to put an especially favorable aspect on the St. Paul's present operating results.

### Showing for 1921

The showing for 1921 was, in brief, as follows: By way of introduction, it should be noted that the St. Paul leased effective July 1, 1921, the lines of the Chicago, Terre Haute & Southeastern, owning 361 miles of line and operating 48 under trackage rights. The earnings and tonnage of this property are included in the St. Paul figures from July 1, 1921.

The St. Paul, in 1921, had freight revenues of \$104,894,848 as compared with \$117,183,815 in 1920, a reduction of \$12,288,968. This reduction was in spite of an increase in the rate per ton mile from 1.029 cents in 1920 to 1.266 cents in 1921; the reduction in tonnage, in other words, was in greater proportion than the reduction in freight earnings.

The passenger earnings totaled \$26,915,456, a reduction of \$4,118,138. The total operating revenues totaled \$146,765,766 as compared with \$168,156,734, or \$21,392,968 less than in 1920. As compared with this reduction in revenues, there was a reduction of \$36,740,119 in operating expenses. The 1921 expenses totaled \$127,957,002 as compared with \$164,697,212 in 1920. The 1921 operating ratio was 87.18. Although too high to indicate a favorable state of affairs, it compared with a ratio in 1920 of 97.64. In connection with the reduction in operating expenses of about \$37,000,000, it should be noted that the reduction in maintenance of way was \$10,823,341; in maintenance of equipment, \$6,013,301, and in transportation, \$19,396,821. The St. Paul does not show figures in its annual report as to the amount of new rail, ballast or ties laid or put in track, so comparisons of this nature must be omitted. With reference to equipment maintenance, it may be said that the condition, as shown by the figures of bad-order cars or unserviceable locomotives, is about average with the rest of the country in the case of cars, and better than average in the case of locomotives.

### Reduction in Tonnage

The St. Paul's total revenue tonnage in 1921 was 34,067,136 as compared with 45,041,277 in 1920. The 1921 figures show that the St. Paul's traffic was divided in that year as follows: Products of agriculture, 19.8 per cent; products of animals, 6.1 per cent; products of mines, 33.7 per cent; products of forests, 17.9 per cent, and manufactures and miscellaneous, 17.4 per cent. The most pronounced reductions in tonnage were in products of mines, including particularly bituminous coal and iron ore, in "other ores and concentrates," in lumber, in pig iron and in building materials of one kind or another. The bituminous coal tonnage, which constituted in 1921 19.4 per cent of the total tonnage totaled 6,594,041 as compared with 8,196,798 tons in 1920. The item of "other ores and concentrates" in 1920 showed 3,265,895 tons, or 7.2 per cent of the total. In 1921 this traffic had decreased to but 875,401 tons, or to only 2.6 per cent of the total tonnage. Products of forests showed a reduction from 9,010,252 tons to 6,086,767 in 1921.

It is evident that what the St. Paul needs is tonnage. It did not have this tonnage in 1921. The question next arises as to whether the road's tonnage may have begun to pick up recently. The answer is that it has—slightly. The St. Paul's car loadings are reported separately for the St. Paul and for the Chicago, Terre Haute & Southeastern. The St. Paul's weekly loadings have shown increases in nearly every week of the past few months over the corresponding weeks of last year. The C., T. H. & S. E. is predominantly a coal road and it has been affected by the strike. It showed increased loadings up to April 1, but in the week ending April 15 it loaded only 2 cars of coal as against last year's corresponding figure of 1,411 cars. Insofar as concerns the St. Paul's own increased loadings, the increase in lumber loadings has been especially noticeable—running about 50 per cent. There have also been increases in manufactures and miscellaneous. There is no particular conclusion that can be drawn from all these figures except that it is apparent that conditions at present look better than they were a year ago, although not strikingly better. It may be further noted that the St. Paul had a deficit after rentals in the first three months of 1922, although its March earn-

ings were good. In March there was a net of \$1,055,902, for the three months a deficit of \$287,903. In the first three months of 1921 there was a deficit after rentals of \$2,473,-236.

#### Acquisition of New Lines

The picture that has been painted of St. Paul conditions is by no means a favorable one. There are, however, some favorable aspects of its activities. These include primarily the lease of the Chicago, Terre Haute & Southeastern, the acquisition of the Chicago, Milwaukee & Gary and the large acquisitions of equipment, all of which should have a favorable effect on the fortunes of the property. As noted above, the Chicago, Terre Haute & Southeastern was leased effective July 1, 1921. This company's lines extend from Chicago Heights south to Terre Haute, Ind., and thence east to Westport. Trackage rights give the line its entrance into Chicago and to Franklin Park, Ill., where connection is made with the Illinois division of the parent company. The line is a coal carrier and gives the St. Paul a traffic in that commodity as well as helping it secure a more favorable fuel supply. To supplement the acquisition of the C., T. H. & S. E., the St. Paul has also acquired by stock ownership the Chicago, Milwaukee & Gary, a line about 100 miles in length. This property is in the nature of an outer belt line around Chicago. It connects with the C., T. H. & S. E. at Delmar and with the St. Paul itself at Kirkland on the Illinois division and at Rockford on the Racine and Southwestern division. Besides permitting the movement of coal from the C., T. H. & S. E. without its going through the congested Chicago terminals, the road is also of value because it connects at Delmar and Mokena, Ill. with the New York Central and Chicago & Eastern Illinois, thus facilitating the interchange business between these two carriers and the St. Paul.

#### New Equipment

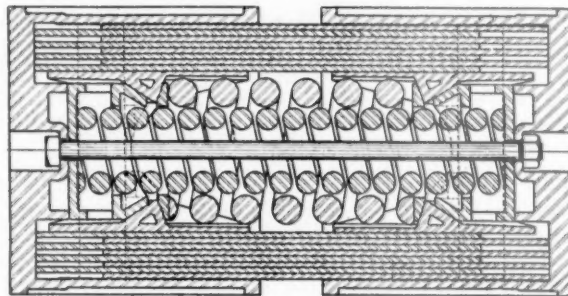
The St. Paul's acquisitions of new equipment have been one of the striking developments of their kind. It is not generally realized just how much the road has done in this connection. The system was allocated by the Railroad Administration 100 Mikado locomotives and 4,000 box cars. In 1920 it ordered from the Baldwin Locomotive Works an additional 100 Mikado locomotives, of which 71 were received that year and 29 early in 1921. There were also received in 1920, 15 electric locomotives. The road then supplemented all these acquisitions with orders placed, in 1921, with the Haskell & Barker Car Company for 1,500 and the Bettendorf Company for 1,000 50-ton steel under-frame gondola cars. It has recently placed additional orders for 25 Mikado locomotives and 4,000 box cars for 1922 delivery. Except for the electrical equipment the new cars and locomotives so far delivered have represented in large measure not so much additions to the former equipment as replacements of old small or weak locomotives or cars. This is shown by the fact that in 1920—in which year the road received 171 steam locomotives, 15 electric locomotives and 4,000 box cars—it eliminated 5 steam locomotives and 3,103 cars. In 1921 it retired 46 steam locomotives and 1,512 cars. The road has also been converting a number of compound to simple type superheated locomotives. It has been devoting considerable attention to improved water stations. The system should be able to make all these things show in reduced operating expenses.

THE CAR-REPAIR SHOPS of the Missouri, Kansas & Texas at Sedalia, Mo., have been reopened under a contract with A. S. Hecker Company, of Cleveland, Ohio. The workmen are to be paid on a piece-work basis. Not many former employees reported for duty.

### Hall Multiplate Friction Draft Gear

**A**FTER MANY experiments and tests to develop a draft gear with the maximum resistance to wear, high capacity, a moderate and positive release, sturdy in construction, simple to manufacture, and easily handled on application and repairs to rolling stock, the Hall Draft Gear Corporation has placed on the market the Hall multiplate friction draft gear.

A friction draft gear of proper design and manufacture



Cross Section Showing Working Parts of the Gear

should meet the following conditions: The resistance to wear should exceed the life of the equipment to which the draft gear is applied. The high resistance should build up uniformly without sticking and jumping so as to keep the sill stresses at a minimum for the shocks absorbed. The release should be moderate and positive so as not to return more shock than necessary to the rolling stock, but at the

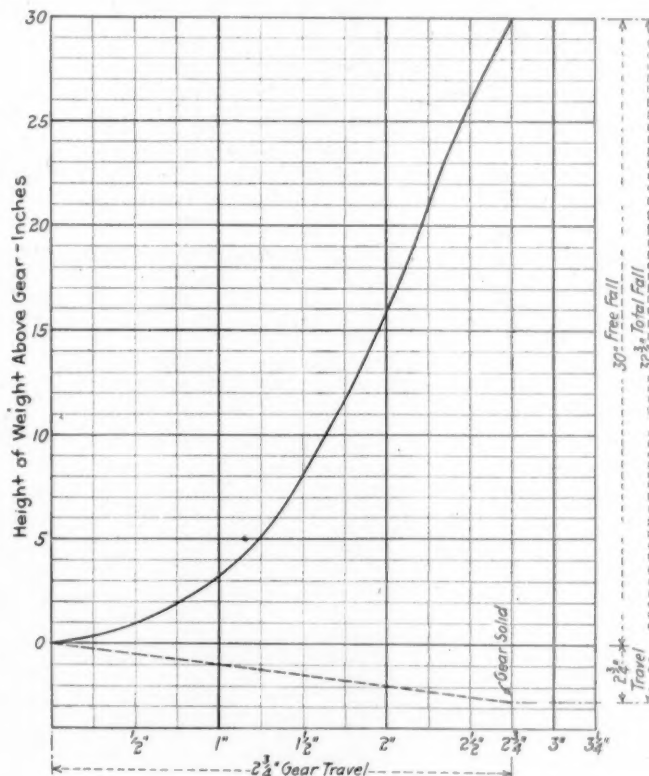


Diagram of Drop Tests of Hall H-2 Gear

same time insure a positive release in order that the draft gear will be ready for operation at any position of the coupler. Sturdy construction is necessary if the draft gear is to give continuous service without repairs, as there is always more or less liability of rough handling of rolling stock. The first cost should be kept down to the minimum; this likewise applies to application and repairs. The draft gear



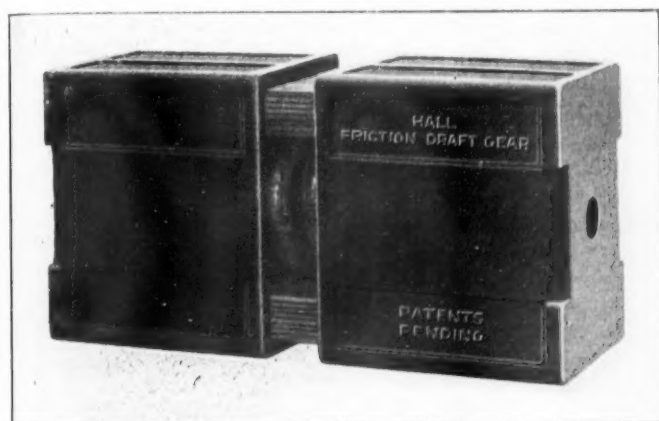
should be a self-contained unit, as application is much simplified if there are no bothersome loose pieces.

It is a well-established fact that friction tends to increase uniformly with the pressure up to the point at which the surfaces in contact begin to seize and abrasion starts. If the friction pressure is low enough there will be practically no wear and if any occurs, the surfaces will be smooth and uniform.

If the friction pressure is too high, scoring, irregular wearing and rapid breaking down of the friction surfaces takes place, which greatly reduces the capacity and life of the draft gear.

Steel in sliding contact without lubrication will show abraded surfaces at approximately 800 lb. per sq. in. frictional pressure. This will be more or less depending on the hardness of the surfaces; therefore, in order to obtain a high capacity draft gear, using low friction pressure per square inch, it is necessary to have an extremely large friction area. This has been accomplished in the Hall multiplate gear by using soft spring steel plates in multiple.

The Class H draft gear, 9 in. by 12 $\frac{3}{4}$  in. by 24 $\frac{5}{8}$  in., illustrated, has 2,300 sq. in. of friction surface and a maxi-



The Hall Multiplate Friction Draft Gear Is a Self-Contained Unit

mum pressure of 250 lb. per sq. in. setting up friction. This gives a mechanical combination which shows very little wear, high capacity and smooth action.

The cross-sectional drawing of the draft gear shows the arrangement of the wedges, wedge plates, springs, friction plates and housings. This draft gear is a self-contained unit without followers or loose pieces. It is symmetrical with respect to all axes and cannot be applied improperly. The standard draft gear is 9 in. by 12 $\frac{3}{4}$  in. by 24 $\frac{5}{8}$  in.; special draft gears 9 in. by 12 $\frac{3}{4}$  in. by 18 $\frac{1}{2}$  in., 8 $\frac{1}{2}$  in. by 12 $\frac{3}{4}$  in. by 15 $\frac{1}{2}$  in. and 12 $\frac{3}{4}$  in. by 15 in. by 24 $\frac{5}{8}$  in., are built to interchange with existing sill pockets. The latter size is for 100 ton and heavier equipment, the spring capacity having been doubled and the friction area greatly increased in order to give approximately double the capacity of the standard draft gear.

The draft gear casing may be described as two identical cast steel housings with open ends towards each other, separated 2 $\frac{3}{4}$  in., or whatever travel the draft gear is designed and set up for. The friction plates are rolled steel of 0.60 to 0.70 per cent carbon content, alternately arranged to move in unison with the housings due to contact at one end of each plate. The weight of the standard gear is 470 lb.

Frictional resistance is created by pressure applied on these friction plates when the draft gear housings are forced towards each other. This pressure is applied by a wedge at each end of the draft gear which moves with the housing, forcing a pair of wedge plates against the friction plates,

the amount of this pressure being determined by the pressure of the friction spring, which compresses as the draft gear is closed. The inner spring shown is the release spring, while the outer spring is the friction spring.

As soon as the buffing or pulling load on the housing terminates, the release spring forces the wedges out of contact with the wedge plates, thereby relieving the pressure on the friction plates. The friction spring then moves the housings, friction plates, draft gear attachments and coupler back to position. The release spring is also arranged to work in unison with the friction spring on release.

Due to both ends of the friction spring acting against a pair of wedge plates at each end of the draft gear, and both pairs of wedge plates being forced against the same friction plates, the arrangement allows a comparatively small capacity friction spring to be used in order to obtain a high friction resistance in this draft gear. The lateral pressure, tending to burst the housing, is comparatively small, due to the multiplicity of the friction plates and the small wedging pressures necessary for a high capacity.

In buffing or in pulling, the force is transmitted to the draft gear housings, tending to force one housing against the other. The resistance to this movement is offered by the internal or frictional parts of the draft gear up to the resistance capacity of the gear. With a force beyond this capacity the draft gear housings come in contact and resist further applied forces. The general design of these housings permits making the parts of sufficient strength to protect the frictional elements of the draft gear from damage, and at the same time to resist high buffing or pulling forces which may occur in the handling of rolling stock. The cross-sectional area of the casing is 23 sq. in. and the solid contact area 30 sq. in.

The draft gear is practically weather proof with all wedge arrangements well away from the central opening and can be applied to cars or locomotives with any design of draft yoke or draft attachments that provides a draft gear pocket of the standard dimensions or various existing draft gear pocket dimensions.

The results of tests of the H-2 gear under the A.R.A. 9,000 lb. drop test machine are shown in one of the drawings. A free fall of 30 in. or a total fall of 32 $\frac{3}{4}$  in. was required to close the gear. The work done was 24,500 ft. lb. and the work absorbed 23,000 ft. lb.

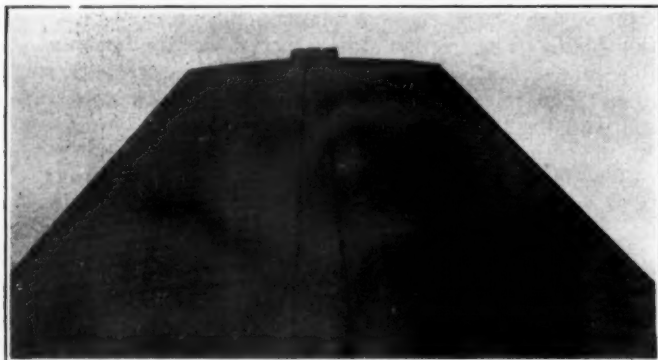
Car impact tests of the H-2 gear were also made on the Symington test plant at Rochester, N. Y., using the same 143,000 lb. cars and equipment used by the United States Railroad Administration, so that comparison could be made with published data. The closing speed was found to be 5.23 m.p.h. Slow speed, solid speed and over-solid speed trials were made to study the draft gear action under various conditions. The gear showed favorable results as regards car movements, velocities, energy absorbed, smoothness of action and sill stresses set up.

## A Self-Supporting Corrugated Steel Freight Car Roof

A NEW DESIGN of freight car roof of the heavy gage, all-metal type, has been placed on the market by the Sharon Pressed Steel Company, Sharon, Pa. The roof is made of pressed sheets, continuous for the entire width of the car. The sheets are of 14 gage steel, black or galvanized, and 20 to 40 in. wide, the length being made to suit the distance over the eaves. Each sheet has corrugations 1 $\frac{1}{4}$  in. deep and 5 in. between centers, extending transversely across the car. These corrugations act as stiffeners and give sufficient strength to support the roof without the use of ridge poles, carlines or purlines, so these

parts are omitted except for one carline at each side of the door opening to stiffen the car frame.

The pressed steel sheets are laid with an overlap of one corrugation at each end. They are attached at the sides of the car to a pressed side plate, being riveted with short



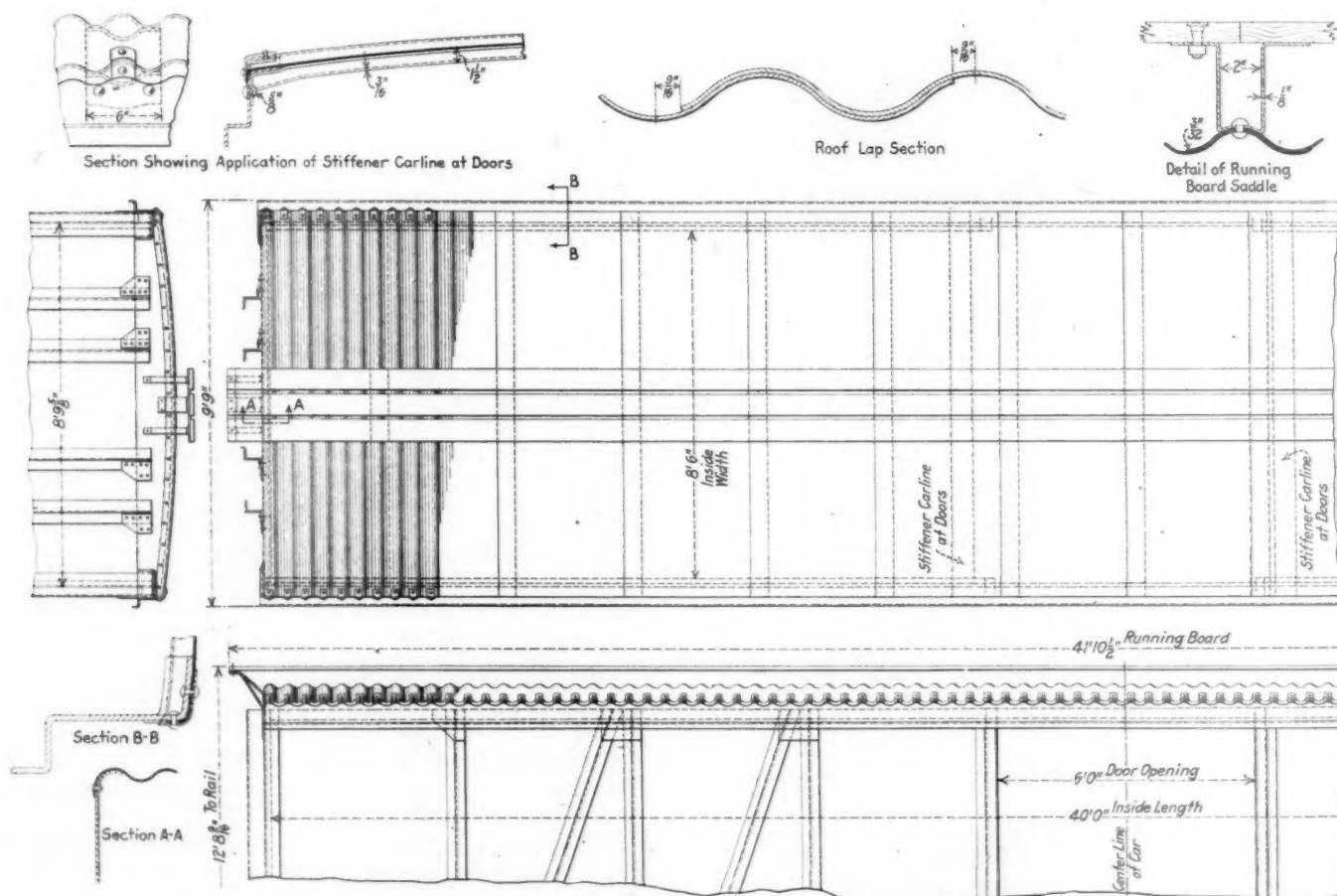
Sharon Pressed Steel Roof as Applied to the Car

angle clips outside the sheet, as shown in the drawing. The side plate is of 3/16 in. or 1/4 in. material and is made continuous from end to end of the car. The design can be adapted to any type of car construction. A side plate of this type is approximately four times as strong as the 5/16

length. Each 40 in. sheet of 14 gage steel when securely fastened at the side plate will carry the following loads concentrated at the center or eaves: for cars 9 ft. wide, 940 lb.; for cars 9 ft. 6 in. wide, 890 lb., and for cars 10 ft. wide, 845 lb. The tensile strength to resist spreading at the sides is 40,000 lb. per sheet. The roof has sufficient play to take care of weaving of the car frame due to uneven track or unbalanced loading. The surface provides a firm foothold in case it is necessary for trainmen to walk at the side of the roof. The overlapping sheets make a watertight construction. No leakage was found even when the roof was tested with a heavy stream from a hose. In case a sheet needs to be replaced, it is only necessary to remove the rivets along each side, cut four rivets in the overlapping sheet and four in the clips.

For new cars this roof can be assembled at the manufacturer's plant and shipped as one piece ready for application to the car frame. When used for repairs the roof is applied in sections and, if desired, can be furnished with sheets of 22 gage steel to be put on over the existing carlines and purlines.

TRANSPORTATION WILL HAVE a prominent place in discussions at the tenth annual meeting of the Chamber of Commerce of the United States to be held in Washington May 15-19. The railroad group session will be held on the afternoon of Tuesday, May 16, and experience under the transportation act, with special ref-



General Arrangement and Sections of the Sharon Roof

in. by 4 in. by 4 in. angle commonly used for this part, and is also lighter by about 120 lb. per car. The special end fascia used with the roof is of one piece, pressed to engage the end roof sheet, and riveted to the side plates. The running board is supported by light pressed steel saddles.

The roof complete weighs about 70 lb. per foot of car

erence to the rate-making provisions and the financial provisions of the act, will be the topic. On the same day two other groups will discuss transportation, one dealing with highways and the other the merchant marine. All of these three groups will combine on the second day to talk of the international phases of the transportation situation.



# Safety Section of A. R. A. Holds Meeting in Chicago

## Large Attendance Discusses Plans Preparatory to Launching Nation-Wide Crossing Campaign

WITH THE INAUGURATION of a four months' campaign of nation-wide scope for the prevention of deaths and injuries at highway crossings as its chief topic, the Safety Section of the American Railway Association met at the Congress Hotel, Chicago, on May 3, 4 and 5. This was the second convention of this section, it having been established on June 27, 1921. E. M. Switzer (C. B. & Q.), chairman of the section, presided and J. C. Caviston, New York City, secretary of the section, acted as secretary. There were about 200 members and guests in attendance. W. M. Jeffers, general manager of the Union Pacific, addressed the meeting on the first day and C. H. Markham, president of the Illinois Central, on the second day. Two hundred twenty-three roads, operating 289,546 miles of line, are members of the section.

The Committee of Direction is to adopt a standard design of a proper end guard for gang motor cars and has endorsed the recommendation of the Mechanical Division Committee, to the effect that freight cars with drawbar yokes not equipped with lips should be rejected in interchange; this in view of accidents resulting from the bolts or rivets holding the yoke to the drawbar shearing off and permitting the coupler to fall to the track. The committee is making a canvass of the injuries sustained by employees in handling uncrated disk harrows, with a view to recommending that the crating of such shipments be required. The committee approved the proposal to provide proper means to permit men to pass over open top cars loaded with boxed automobiles, or similar freight.

This last point aroused considerable discussion. R. C. Richards (C. & N. W.) contended that little climbing over cars is done when a train is in motion; that the proposed rule was impracticable and that few accidents are attributable to such causes. R. J. Clancy (S. P.) and M. A. Dow (N. Y. C.), coincided in this view; and, after further discussion, the proposal was disapproved.

### The Goggle Question

Secretary Caviston presented the report of the sub-committee on goggles, which had sent out a questionnaire. It appears that 74 of the 75 roads making replies require or request employees to wear goggles when doing work dangerous to the eyes. Of these, 27 reported the enforcement of the requirement through discipline. The majority of the 74 roads furnish goggles to each workman for his exclusive use. About 15 different makes of goggles are in use, there usually being three styles, one for welders, one for boiler-makers and one for other crafts. The committee concludes that general provisions for education and compulsion are not entirely successful; it is necessary to remove the objections to goggles in each individual case.

Discussing experiences, L. F. Shedd (C. R. I. & P.) said that while some injuries have been sustained on his road when goggles were worn, no eyes have been lost. J. W. Kreitter (D. M. & N.) said that among the 1,200 men engaged in hazardous occupations on his road, of whom 99 per cent wear goggles, no eye accidents have occurred in five years. On some roads trainmen are required to wear goggles. L. G. Bentley (B. & O.) strongly advocated providing individual goggles and grinding of lenses to suit the eye as determined by optical tests. E. S. Chapin (Penn.) explained how the objections of men could be met by modifications in the goggle. C. O. Cott (H. V.) said that the change from

the ear type fastening to the elastic headband fastening had removed the main objections.

### Report on Statistics

In presenting the statistical report, T. H. Carrow (Penn.) stated that this committee is working in close touch with the Bureau of Statistics, I. C. C., and has already obtained a number of desired modifications of the government requirements; accidents in maintenance of way work are to be separated from others. The committee has compared the accident reports of different roads and has taken measures to overcome what appears to be a lack of uniformity in reporting.

R. C. Richards (C. & N. W.) cited a record where, in 1920, fourteen of the employees killed and 1,840 of the injured were new men. Accident reports should show the number of accidents to such men.

Mr. Carrow said that such figures will be valuable in explaining the increase in casualties which will probably occur when traffic revives.

F. N. Metcalfe (N. P.) suggested that statistical information should show in detail what accidents cost; but this did not find favor.

The Committee on Publicity and Education made a report. Its chief activities have been the preparation of bulletins from time to time pertaining to particularly dangerous practices. Articles for employees' magazines and for newspapers have been prepared. Progress has been made in establishing a motion picture library as recommended at the first convention. These films will be obtained from a number of roads, from manufacturers of railway supplies and by purchase. It is planned to obtain 30 films as a nucleus for the library. M. A. Dow (N. Y. C.) presented this report.

### C. H. Markham Addresses the Section

One of the most interesting features of the convention was the address, at the opening of the second day's session, by C. H. Markham, president of the Illinois Central. He opened with the statement that no branch of railway organization has been more successful in its work than the safety section and emphasized the fact that there were fewer accidents on American railroads in 1921 than in any previous twelve-month in 32 years, notwithstanding an increase in the number of employees of 130 per cent, in passenger traffic of 223 per cent, and in freight traffic of 346 per cent. This is one of the most helpful things being said about railways at the present time. Referring to accidents at highway crossings, "the weakest spot," Mr. Markham showed that in 30 years fatal injuries occurring at railroad crossings have increased 345 per cent and injuries, 632 per cent. Of the 1,907 persons killed and the 4,961 injured in crossing accidents in 1920, about 70 per cent resulted from automobile accidents. Records kept by the Illinois Central for several years disclosed the fact that more than half of the automobile accidents originated on the fireman's side of the train. Mr. Markham pointed out the small amount of improvement possible by the construction of bridges; it would take over 600 years to complete the work if it were conducted on the basis of the 339 crossings eliminated in 1919. The public must co-operate in bringing pressure to bear upon all drivers of motor cars. In the crossing campaign conducted by the Illinois Central in 1916, seventeen towns and cities passed crossing ordinances and one state enacted a law. It is astonishing, said Mr. Markham, that "Stop, Look and Listen"

laws, with teeth in them, have not been passed by all states, towns and cities. He expressed the hope that this organization would accomplish important results along these lines.

### The Careful Crossing Campaign

Following Mr. Markham's address the section spent the greater part of the remainder of the day in the discussion of plans for the campaign to prevent accidents at highway crossings. H. A. Rowe (D. L. & W.) presented the report of the committee, submitting a complete plan of organization. "Cross Crossings Cautiously" will be the campaign slogan for use on all bulletins, circulars and posters. The conspicuous feature of the campaign will be a universal three-color poster bearing a picture of an impending crossing disaster. Four sub-committees are provided for, one of which will co-operate with all national organizations. A second one will prepare all matter for printing, including the obtaining of articles from prominent persons throughout the country, while a third will arrange for the distribution of all the printed matter. A fourth will receive and handle all suggestions relative to the physical condition of crossings and movements over them. It is the plan also to make frequent observations at important crossings, to direct personal notices to all persons found careless at such points, and to receive and disseminate statistics on the progress of the campaign.

Mr. Rowe contended that the success of accident prevention at crossings cannot be looked for from legislation exclusively; the railroads must try to enlist the personal interest of every citizen.

The discussion was devoted chiefly to the details of the proposed work and contained little for record, aside from certain remarks made by T. H. Carrow (Penn.), who reviewed interesting studies made on his road relative to the speed of trains in crossing accidents. Of 366 accidents, two-thirds happened where trains were running at speeds of less than 30 miles an hour.

### The Foreman's Responsibility

The last day's program was devoted to a general discussion of several prearranged subjects relating to safety work, the first being the question of the responsibility of foremen and others in supervisory positions for injuries to men working under them. In opening the discussion, F. H. Babcock (P. & L. E.) contended that the foremen must be relied upon to set the example for the others in safety work. It is only proper, in holding foremen responsible for the regular work in their department, to hold them also responsible for safety supervision. E. S. Chapin (Penn.) cited instances wherein insurance companies definitely asserted themselves with respect to proposed changes of foremen; and A. V. Rohweder (D. M. & N.) told of the results obtained on his road when responsibility was fixed upon foremen for safety results. While endorsing these opinions, M. A. Dow (N. Y. C.) cautioned against fixing responsibility upon foremen without at the same time arousing in them a personal interest in the safety work; a sentiment which was warmly applauded.

### Motor Car Accidents

The second subject presented for discussion was that of controlling injuries arising in the use of motor cars. A. O. Ridgway (D. & R. G. W.) told how an extended study on his road had disclosed that most accidents occurred at the starting of cars. This problem was largely met by equipping every car with a sufficient number of grab irons. Other steps which proved effective were the supplying of suitable hand holds for use while riding, and guards at the edge to prevent tools from falling off while the cars are in motion; also the placing of restrictions on speed. At this point Chairman Switzer stated that as a result of the section's recommendation last year concerning the use of end guards on cars, 1,000 cars had already been so equipped, to his knowledge. Fol-

lowing Mr. Switzer, F. C. Hunter (U. P.) told how, after an unusually large number of accidents on a certain division, personal visits were made to every motor car driver; each was given to understand that he was to be held strictly accountable for accidents arising from his car; and the trouble was completely overcome. Also, all motor cars were equipped with safety devices, including wheel guards; and for a time all cars were required to be brought to a full stop at grade crossings. The latter order was amended three months later to require stops only at obscure crossings, while requiring speed to be controlled at all others.

L. F. Shedd stated that the Rock Island had put railings upon all of its 1,800 cars, since which there has been a marked reduction in motor car accidents. He suggested that the Interstate Commerce Commission be requested to segregate motor car accidents from others.

### Miscellaneous Topics

The remaining subjects discussed by the section pertained to the control of injuries arising from riding leading foot-boards on locomotives, the advisability of posting names in accident bulletins, the control of injuries to car repairers, and the control of injuries in handling rails. Some were opposed to a rigid rule against riding on foot-boards, but there was a general agreement that there should be some restriction. A poll disclosed that a dozen or more roads have rules, more or less strict, regarding this practice.

No disagreement was expressed regarding the claim that names of the injured should not be bulletined unless in peculiar instances and with the injured man's permission, but some controversy arose in regard to the protection of car repair men while at work. Attacking the statement of Robert Scott (A. C. L.) that the adherence to the blue flag rule causes a loss of time, L. G. Bentley (C. & O.) insisted that its rigid observance should be adhered to. W. D. Lendenking (B. & O.) contended that the blue flag rule was not sufficient in itself; all repair tracks should be kept locked. Enlarging upon this, S. J. Campbell (C. G. W.) pointed out the value of guarding against faulty jacks and of making regular inspection of carmen's tools.

The discussion of the subject of handling rails concluded the proceedings of the convention. Team work among the men in any task of this kind is of the first importance; also constant watchfulness on the part of the foreman and close co-operation on the part of the power operator. J. F. Grodzki (O.-W. R. & N.) emphasized the importance of instructing green men and of holding meetings for this purpose immediately after receiving a report of an accident.

The following officers were chosen to serve during the coming year: Chairman, J. T. Broderick, superintendent, safety department, Baltimore & Ohio; first vice-chairman, Isaiah Hale, safety superintendent, Atchison, Topeka & Santa Fe; second vice-chairman, D. H. Beatty, superintendent of safety, Southern Railway System, and secretary, J. C. Caviston, 30 Vesey street, New York City.

THE CITY OF BUFFALO proposes to take action in the courts to compel the New York Central to install gates at four grade crossings; those at Genesee, Church, Erie and Seneca streets. These are now guarded by flagmen.

E. F. GRABLE, president of the United Brotherhood of Maintenance of Way employees and railway shop workers, has called a conference, to be held at Atlanta on May 16, to discuss the withdrawal of the skilled men in that branch of the service in the south-east. The invitation has gone to all general chairmen and vice presidents on the different railroads in the southeastern and Pochontas districts. J. O. Raley, formerly an international vice president of this organization, who was chosen president of the order of skilled railway maintenance of way employees at a meeting held in Atlanta a few weeks ago, is looked upon as an outlaw.



## General News Department

**J. E. Fairbanks**, general secretary, announces, on behalf of the Committee on Relation of Railway Operation to Legislation, of the American Railway Association, that the law of Maryland which repeals the full-crew law of that state, will go into effect on June 1, and that the similar law in New Jersey goes into effect on July 4.

The House committee on interstate and foreign commerce on May 3 reported favorably without amendment the bill recently passed by the Senate, S. 539, to strike out of the valuation act the requirement that the Interstate Commerce Commission shall ascertain and report the so-called excess cost of acquisition of railroad lands.

The New York Sectional Committee of the signal section of the American Railway Association will meet at Hotel McAlpin, Broadway and 34th street, New York City, on Thursday evening, May 18, to listen to an address by Robert C. Johnson, signal engineer, Brooklyn Rapid Transit Company, on "A Scientific Method of Locating Automatic Block Signals for a Railroad of Heavy Traffic."

An Assistant Railroad Engineer is one of the positions named by the Civil Service Commission of the State of New York in announcing examinations for candidates, to be given on June 3. An appointment to this position is to be made by the Public Service Commission; salary \$3,200. Candidates must have had six years' experience in connection with the maintenance and construction of steam railroads, or equivalent qualification. Graduation from a civil engineering course of a school of the highest standing will be counted as two years of experience. Applications should be sent to the Civil Service Commission, at Albany, before May 22.

### May Meeting of New York Railroad Club

W. L. Bean, mechanical assistant of the New York, New Haven & Hartford, will deliver a lecture on Some Recent Developments in Gasoline Driven Passenger Rail Cars before the New York Railroad Club on May 19. The meeting will be held at the Engineering Societies' Building, New York, at 8 p. m. Mr. Bean's lecture will be illustrated by slides and motion pictures.

### Special Train from Chicago for June Convention

For the convenience of persons going to Atlantic City to attend the convention of the Mechanical Division of the American Railway Association, which meets from June 14 to 21, inclusive, the Pennsylvania System will run a special train leaving Chicago at 1 p. m., central time, on June 12 and arriving at Atlantic City at 10:45 a. m., eastern time, on the following day. The train will consist of club, open section, drawing room and compartment cars, and a dining car.

### Stone and Shepard Urge Election of

#### Right Men to Avert Walkouts

Strike at the ballot box and you will not have to strike in your employment was, in substance, the advice given to the Order of Railway Conductors at their annual convention held in Cleveland, Ohio, last week, by L. E. Shepard, president of that organization, and Warren S. Stone, president of the Brotherhood of Locomotive Engineers. Both speakers also urged the members of the Ladies' Auxiliary to enter politics.

"I warn politicians, I warn any administration, state or national, that attempts by legislation to tie the hands of the workers is fraught with dangerous possibilities," President Shepard said, while Mr. Stone stated: "The place to strike and the time to strike is on election day at the ballot box. When you do that and send men to Washington to represent you and not misrepresent you, you will not need to strike."

Former Secretary of War, Newton D. Baker, said the "civiliza-

tion of America is a railroad civilization." He complimented railroad workers for their service within the firing zone during the war.

### Fuel Association Convention

The International Railway Fuel Association has adopted a novel plan for the sessions of the annual convention to be held at the Auditorium Hotel, Chicago, May 22-25, which it is thought will add to the value of the meeting. Following the presentation of the papers, written discussions will be read after which an open forum will be conducted giving all who are present at the meeting an opportunity to speak. No stenographic report of the informal discussion will be made but opportunity will be given to submit written discussions to the secretary of the association which must be sent in not later than June 15. The officers of the association anticipate that this plan will call forth freer discussion, speed up the program and expedite the issuing of proceedings.

### "Summer Time"

Changes in the time of passenger trains made on April 30, to accommodate the large number of cities and towns that adopted "Summer Time" on that day, were so numerous that the Official Guide was obliged to reset about 25 per cent of its time-table pages for the May issue; but the book came out on May 10, nevertheless. The total number of time-tables received for correction in that issue of the Guide was about 500, something less than 400 of these taking effect on April 30. Most of the changes in the United States were east of the Mississippi river, but in Canada the change took effect from ocean to ocean.

On the Long Island Railroad and on the eastern division of the Erie, time-tables were not changed on account of daylight saving time, the clocks being set to the Sixtieth meridian, to correspond with the clocks used by citizens generally.

### A Look Ahead

The people rule the railroads; if they appreciate their responsibility they will take up this duty seriously at its primary stage, the ballot, by which must be selected the right agents to carry out the people's wishes. This was the burden of an address by Elisha Lee, vice-president of the Pennsylvania Railroad, before the Transportation Club of New York city, on May 5.

Mr. Lee presented a hopeful view of the future of American railroads. Motor and air transport competition is more likely to be beneficial than harmful. He believes the people will retain private ownership and will learn how to regulate constructively. He sees a trend away from paternalism and in the direction of restoring the initiative of management. In closing, he said: "The neglect of the ballot is the peril of Americanism. How is it that we have permitted ourselves to be dragged so far into communistic and socialistic experiments in the last few years? Why do we permit thrift, industry, enterprise, and intelligence to be robbed of their fruits? . . . A large proportion of the people who ought to be our most solid and substantial citizens fail in the primary obligation of citizenship—that of exercising the right and the duty of the ballot. And we particularly need to exercise jealous care in the place where so many of us fail—at the primary elections. Often barely one voter in four or five takes part in them. Yet it is at the primaries that the office-holders are really chosen. If we get good Americans on all tickets the country cannot very well go far astray in the final elections. We must preach everywhere the importance of getting substantial thinking people to go to the polls at every election and to pay especial attention to the primaries. . . . I do not think Providence intended this great country of ours to be run by, or chiefly in the interest of, the disgruntled, the envious, the failures, the incompetents, the lazy, the indifferent, the culls, the resentful, the inefficient, or the visionary. . . ."

## REVENUES AND EXPENSES OF RAILWAYS

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1922

Name of road.	Average mileage operated during period.	Operating revenues			Operating expenses			Total.	Operating ratio.	Net from railway operations.	Operating income (or loss).	Net after rentals.	Net after rentals 1921.
		Freight.	Passenger.	(Inc. misc.)	Tot. (Way and structures.)	Traffic.	Trans- portation.	General.					
Alabama & Vicksburg.....	141	\$188,717	\$55,367	\$261,446	\$42,655	\$8,473	\$92,145	\$11,863	\$197,310	75.50	\$64,136	\$41,687	\$31,324
Albany & Vicksburg.....	141	522,227	162,242	731,113	118,338	26,492	287,309	35,171	619,568	77.50	111,545	50,842	37,005
Albany, Shreveport & Pacific.....	171	200,872	86,446	309,121	41,347	9,720	121,321	13,134	239,724	77.50	69,397	47,865	41,790
Akron, Canton & Youngstown.....	170	561,587	258,962	878,747	134,377	28,101	357,238	39,765	728,168	82.80	150,379	93,991	73,566
Ann Arbor.....	293	373,273	122,633	1,141,536	182,581	28,584	541,181	38,570	921,306	76.20	102,748	66,086	58,773
Atchison, Topeka & Santa Fe.....	8,855	9,843,707	3,242,967	14,201,623	2,187,293	255,259	10,857,355	1,019,670	22,233,690	77.20	3,244,268	2,213,690	2,283,598
Gulf, Colo. & Santa Fe.....	1,907	1,294,209	286,961	1,717,985	411,118	39,239	602,634	65,656	1,569,924	80.00	7,806,002	5,073,577	2,190,102
Panhandle & Santa Fe.....	857	472,021	102,516	629,522	132,646	17,325	208,603	19,159	563,622	89.50	65,900	42,791	27,215
Atlanta & West Point.....	857	1,286,096	289,998	1,688,148	348,348	19,050	609,273	56,436	1,616,794	95.80	71,134	2,557	91,047
Western of Alabama.....	93	259,518	194,373	521,047	73,474	23,239	215,020	30,302	430,446	92.20	40,601	12,789	10,822
Atlanta, Birmingham & Atlantic.....	639	286,976	32,180	338,513	57,877	89,268	168,156	16,002	352,488	104.10	13,975	37,427	54,812
Atlantic Coast Line.....	4,923	4,869,744	1,602,340	7,981,047	699,800	122,093	2,229,117	48,338	4,613,908	65.20	2,467,139	2,186,237	2,031,822
Charleston & Western Canadian.....	342	299,837	35,196	351,227	45,444	7,771	128,752	6,542	222,329	70.00	5,523,952	4,740,930	4,440,260
Baltimore & Ohio.....	5,235	15,563,128	2,094,646	18,614,749	2,200,969	306,650	6,805,581	496,006	14,453,578	77.06	4,161,171	3,413,591	3,081,212
Balti. & Ohio Chic. Term.....	91	.....	.....	.....	.....	.....	.....	.....	.....	79.90	9,618,729	7,552,166	6,675,442
Staten Isl. Rapid Transit.....	23	101,712	85,547	202,844	38,461	1,882	113,348	15,148	200,035	98.60	2,809	12,557	27,543
Bangor & Aroostook.....	625	803,364	82,104	912,539	108,016	3,120	231,257	17,995	341,681	54.06	419,201	341,681	339,054
Belt Ry. Co. of Chicago.....	32	.....	.....	.....	.....	.....	.....	.....	.....	63.90	200,042	151,356	144,074
Bessemer & Lake Erie.....	225	722,904	32,278	775,168	119,471	12,833	261,456	21,328	726,112	93.70	50,016	16,304	67,995
Bingham & Garfield.....	34	10,728	1,163	11,163	21,131	1,309	5,884	4,562	36,573	327.60	25,410	31,489	27,236
Boston & Maine.....	2,287	4,473,346	1,739,429	6,862,664	941,804	55,154	3,137,784	32,940	5,657,038	82.40	1,057,449	840,151	611,228
Brooklyn Eastern District Terminal.....	9	160,966	169,594	5,449	26,279	25	58,834	5,735	66,322	56.80	73,272	66,923	39,461
Buffalo & Susquehanna.....	253	161,676	7,418	174,207	30,368	463	155,204	14,990	248,321	60.30	163,351	144,304	144,304
Buffalo, Rochester & Pittsburgh.....	589	1,524,318	131,137	1,704,765	290,722	18,730	600,570	38,434	1,372,477	80.51	332,288	294,038	325,156
Canadian Pacific (Lines in Me.).....	233	263,666	38,434	321,700	24,131	4,352	138,320	4,341	230,210	71.60	91,490	75,490	62,280
Carolina, Clinchfield & Ohio.....	291	631,413	35,373	679,136	71,046	23,214	170,666	19,077	449,390	66.20	229,746	189,689	283,174
Central of Georgia.....	1,913	1,427,152	387,962	1,983,465	232,650	62,009	2,176,060	85,607	1,445,188	66.90	616,037	495,851	666,588
Central of New Jersey.....	688	3,978,907	656,277	4,895,718	294,617	32,105	1,787,684	108,254	3,483,829	71.10	1,411,889	1,147,951	1,093,253
Central Vermont.....	407	427,037	92,436	570,304	64,724	11,039	360,327	25,044	522,912	91.70	47,502	30,347	65,912
Chesapeake & Ohio.....	2,548	6,729,769	765,265	7,832,296	804,183	21,438	2,704,463	486,908	15,871,788	75.30	1,960,500	1,691,937	1,736,374
Chicago & Alton.....	1,050	2,113,868	465,695	2,763,525	185,945	51,931	1,027,843	60,103	2,040,526	73.80	722,099	649,958	509,570
Chicago & Eastern Illinois.....	945	1,806,441	348,657	2,294,677	197,386	49,596	887,739	69,005	1,744,061	76.00	550,618	464,584	485,866
Chicago & North Western.....	8,402	21,611,892	6,816,651	31,570,365	3,156,207	48,632	15,480,053	948,200	27,376,817	86.70	4,193,548	1,991,144	1,712,169
Chicago, Burlington & Quincy.....	9,393	10,833,940	2,072,623	13,969,630	1,516,592	174,268	4,993,200	429,735	10,040,496	71.90	3,929,134	3,008,180	2,896,358
Chicago & Great Western.....	1,496	28,697,568	6,124,054	37,714,246	3,477,471	54,638	14,551,823	1,016,753	28,271,588	75.00	9,442,658	6,684,367	5,338,254
Chicago & Great Western.....	1,496	1,493,066	351,093	1,997,294	161,163	66,477	851,195	54,638	1,612,811	80.70	384,483	169,576	91,213
Chicago & Great Western.....	1,496	3,959,685	1,011,799	5,373,131	455,413	194,843	2,317,273	165,656	4,778,363	88.90	594,748	341,145	146,982



May 13, 1922

RAILWAY AGE

1135

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1922—CONTINUED

Name of road	Average mileage operated during period	Operating revenues—Total			Operating expenses			Operating ratio	Net from railway operations	Operating income (or loss)	Net after rentals, 1921
		Freight	Passenger	(inc. misc.)	Traffic	Trans- portation	General				
Chicago, Indiana & Louisville.....Mar. 657	1,036,833	\$247,822	\$1,397,685	\$128,970	\$283,653	\$512,616	\$37,520	72.20	\$389,171	\$314,651	\$2,209
Chicago, Indiana & Louisville.....3 mos. 657	3,036,334	691,762	4,181,166	363,444	848,272	1,534,084	106,338	75.70	909,712	729,850	425,127
Chicago Junction.....Mar. 12	1,036,833	247,822	1,397,685	128,970	283,653	512,616	37,520	70.30	390,837	320,486	163,895
Chicago Junction.....3 mos. 12	3,036,334	691,762	4,181,166	363,444	848,272	1,534,084	106,338	70.10	909,712	729,850	380,657
Chicago, Milwaukee & St. Paul.....Mar. 246	1,036,833	247,822	1,397,685	128,970	283,653	512,616	37,520	82.50	2,341,354	1,537,874	1,055,902
Chicago, Milwaukee & St. Paul.....3 mos. 246	3,036,334	691,762	4,181,166	363,444	848,272	1,534,084	106,338	82.50	2,341,354	1,537,874	2,473,230
Chicago, Peoria & St. Louis.....Mar. 461	1,036,833	247,822	1,397,685	128,970	283,653	512,616	37,520	80.60	3,271,622	2,371,061	1,645,527
Chicago, Peoria & St. Louis.....3 mos. 461	3,036,334	691,762	4,181,166	363,444	848,272	1,534,084	106,338	80.60	3,271,622	2,371,061	3,214,527
Chicago, Rock Isl. & Pacific.....Mar. 7,661	1,036,833	247,822	1,397,685	128,970	283,653	512,616	37,520	79.30	2,025,480	1,494,319	1,288,787
Chicago, Rock Isl. & Pacific.....3 mos. 7,661	3,036,334	691,762	4,181,166	363,444	848,272	1,534,084	106,338	79.30	2,025,480	1,494,319	1,288,787
Chic., Rock Isl. & Gulf.....Mar. 461	1,036,833	247,822	1,397,685	128,970	283,653	512,616	37,520	85.30	3,944,939	2,371,061	1,645,527
Chic., Rock Isl. & Gulf.....3 mos. 461	3,036,334	691,762	4,181,166	363,444	848,272	1,534,084	106,338	85.30	3,944,939	2,371,061	3,214,527
Chic., St. Paul, Minn. & Omaha.....Mar. 1,749	1,036,833	247,822	1,397,685	128,970	283,653	512,616	37,520	81.90	435,825	300,402	274,192
Chic., St. Paul, Minn. & Omaha.....3 mos. 1,749	3,036,334	691,762	4,181,166	363,444	848,272	1,534,084	106,338	81.90	435,825	300,402	274,192
Cin., Indianapolis & Western.....Mar. 321	1,036,833	247,822	1,397,685	128,970	283,653	512,616	37,520	72.70	294,111	211,111	131,161
Cin., Indianapolis & Western.....3 mos. 321	3,036,334	691,762	4,181,166	363,444	848,272	1,534,084	106,338	72.70	294,111	211,111	316,451
Colorado & Southern.....Mar. 1,099	1,036,833	247,822	1,397,685	128,970	283,653	512,616	37,520	65.70	70,528	25,380	15,316
Colorado & Southern.....3 mos. 1,099	3,036,334	691,762	4,181,166	363,444	848,272	1,534,084	106,338	65.70	70,528	25,380	46,231
Colo. & Denver City.....Mar. 256	1,036,833	247,822	1,397,685	128,970	283,653	512,616	37,520	69.70	70,528	25,380	15,316
Colo. & Denver City.....3 mos. 256	3,036,334	691,762	4,181,166	363,444	848,272	1,534,084	106,338	69.70	70,528	25,380	46,231
Wichita Valley.....Mar. 226	1,036,833	247,822	1,397,685	128,970	283,653	512,616	37,520	88.20	76,200	14,241	8,709
Wichita Valley.....3 mos. 226	3,036,334	691,762	4,181,166	363,444	848,272	1,534,084	106,338	88.20	76,200	14,241	26,424
Columbus & Greenville.....Mar. 887	1,036,833	247,822	1,397,685	128,970	283,653	512,616	37,520	83.40	685,804	592,982	613,225
Columbus & Greenville.....3 mos. 887	3,036,334	691,762	4,181,166	363,444	848,272	1,534,084	106,338	83.40	685,804	592,982	1,837,547
Delaware & Hudson.....Mar. 994	1,036,833	247,822	1,397,685	128,970	283,653	512,616	37,520	72.60	1,939,104	1,462,346	1,566,092
Delaware & Hudson.....3 mos. 994	3,036,334	691,762	4,181,166	363,444	848,272	1,534,084	106,338	72.60	1,939,104	1,462,346	4,737,570
Dela., Lackawanna & Western.....Mar. 253	1,036,833	247,822	1,397,685	128,970	283,653	512,616	37,520	71.00	714,872	559,702	611,994
Dela., Lackawanna & Western.....3 mos. 253	3,036,334	691,762	4,181,166	363,444	848,272	1,534,084	106,338	71.00	714,872	559,702	1,819,925
Denver & Rio Grande Western.....Mar. 255	1,036,833	247,822	1,397,685	128,970	283,653	512,616	37,520	81.80	80,550	53,540	65,887
Denver & Rio Grande Western.....3 mos. 255	3,036,334	691,762	4,181,166	363,444	848,272	1,534,084	106,338	81.80	80,550	53,540	194,103
Denver & Salt Lake.....Mar. 385	1,036,833	247,822	1,397,685	128,970	283,653	512,616	37,520	97.40	3,711	—6,289	—11,926
Denver & Salt Lake.....3 mos. 385	3,036,334	691,762	4,181,166	363,444	848,272	1,534,084	106,338	97.40	3,711	—6,289	48,417
Detroit & Mackinac.....Mar. 385	1,036,833	247,822	1,397,685	128,970	283,653	512,616	37,520	120.00	217,226	217,226	327,493
Detroit & Mackinac.....3 mos. 385	3,036,334	691,762	4,181,166	363,444	848,272	1,534,084	106,338	120.00	217,226	217,226	1,001,527
Detroit & Toledo Shore Line.....Mar. 61	1,036,833	247,822	1,397,685	128,970	283,653	512,616	37,520	64.40	272,804	257,904	179,659
Detroit & Toledo Shore Line.....3 mos. 61	3,036,334	691,762	4,181,166	363,444	848,272	1,534,084	106,338	64.40	272,804	257,904	248,601
Detroit, Toledo & Iron Range.....Mar. 405	1,036,833	247,822	1,397,685	128,970	283,653	512,616	37,520	69.00	564,362	521,034	334,356
Detroit, Toledo & Iron Range.....3 mos. 405	3,036,334	691,762	4,181,166	363,444	848,272	1,534,084	106,338	69.00	564,362	521,034	234,782
Duluth, Missabe & Northern.....Mar. 591	1,036,833	247,822	1,397,685	128,970	283,653	512,616	37,520	210.90	759,736	959,355	69,169
Duluth, Missabe & Northern.....3 mos. 591	3,036,334	691,762	4,181,166	363,444	848,272	1,534,084	106,338	210.90	759,736	959,355	166,404
Duluth, So. Shore & Atlantic.....Mar. 459	1,036,833	247,822	1,397,685	128,970	283,653	512,616	37,520	241.60	449,337	470,115	468,147
Duluth, So. Shore & Atlantic.....3 mos. 459	3,036,334	691,762	4,181,166	363,444	848,272	1,534,084	106,338	241.60	449,337	470,115	1,442,284
Duluth, Winnipeg & Pacific.....Mar. 178	1,036,833	247,822	1,397,685	128,970	283,653	512,616	37,520	270.50	261,046	316,410	317,989
Duluth, Winnipeg & Pacific.....3 mos. 178	3,036,334	691,762	4,181,166	363,444	848,272	1,534,084	106,338	270.50	261,046	316,410	926,245
Elgin, Joliet & Eastern.....Mar. 1,139	1,036,833	247,822	1,397,685	128,970	283,653	512,616	37,520	301.10	759,736	959,355	69,169
Elgin, Joliet & Eastern.....3 mos. 1,139	3,036,334	691,762	4,181,166	363,444	848,272	1,534,084	106,338	301.10	759,736	959,355	166,404
El Paso & Southwestern.....Mar. 1,989	1,036,833	247,822	1,397,685	128,970	283,653	512,616	37,520	114.40	121,798	209,034	221,707
El Paso & Southwestern.....3 mos. 1,989	3,036,334	691,762	4,181,166	363,444	848,272	1,534,084	106,338	114.40	121,798	209,034	686
Erie.....Mar. 269	1,036,833	247,822	1,397,685	128,970	283,653	512,616	37,520	91.40	9,373	—5,073	—10,334
Erie.....3 mos. 269	3,036,334	691,762	4,181,166	363,444	848,272	1,534,084	106,338	91.40	9,373	—5,073	136,663
Chicago & Erie.....Mar. 47	1,036,833	247,822	1,397,685	128,970	283,653	512,616	37,520	18.961	18,961	941,842	812,376
Chicago & Erie.....3 mos. 47	3,036,334	691,762	4,181,166	363,444	848,272	1,534,084	106,338	18.961	18,961	941,842	1,195,097
New Jersey & New York.....Mar. 135	1,036,833	247,822	1,397,685	128,970	283,653	512,616	37,520	238.437	137,449	97,940	48,667
New Jersey & New York.....3 mos. 135	3,036,334	691,762	4,181,166	363,444	848,272	1,534,084	106,338	238.437	137,449	97,940	146,667
N. Y., Susquehanna & Western.....Mar. 764	1,036,833	247,822	1,397,685	128,970	283,653	512,616	37,520	74.20	685,670	391,231	349,753
N. Y., Susquehanna & Western.....3 mos. 764	3,036,334	691,762	4,181,166	363,444	848,272	1,534,084	106,338	74.20	685,670	391,231	1,066,186
Florida East Coast.....Mar. 249	1,036,833	247,822	1,397,685	128,970	283,653	512,616	37,520	75.50	241,317	186,250	82,114
Florida East Coast.....3 mos. 249	3,036,334	691,762	4,181,166	363,444	848,272	1,534,084	106,338	75.50	241,317	186,250	250,561
Ft. Smith & Western.....Mar. 13	1,036,833	247,822	1,397,685	128,970	283,653	512,616	37,520	105.031	79,498	68,327	69,834
Ft. Smith & Western.....3 mos. 13	3,036,334	691,762	4,181,166	363,444	848,272	1,534,084	106,338	105.031	79,498	68,327	209,998
Galveston Wharf.....Mar. 328	1,036,833	247,822	1,397,685	128,970	283,653	512,616	37,520	105.031	79,498	68,327	69,834
Galveston Wharf.....3 mos. 328	3,036,334	691,762	4,181,166	363,444	848,272	1,534,084	106,338	105.031	79,498	68,327	209,998
Georgia.....Mar. 405	1,036,833	247,822	1,397,685	128,970	283,653	512,616	37,520	105.031	79,498	68,327	69,834
Georgia.....3 mos. 405	3,036,334	691,762	4,181,166	363,444	848,272	1,534,084	106,338	105.031	79,498	68,327	209,998

## REVENUES AND EXPENSES OF RAILWAYS

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1922—CONTINUED

Name of road.	Average mileage operated during period.	Operating revenues			Operating expenses			Operating ratio.	Net from railway operations.	Net after rentals.	Net after rentals 1921.
		Freight.	Passenger: (inc. misc.)	Total.	Way and structures.	Traffic.	Trans- portation.				
Grand Trunk Western.....Mar.	351	\$1,014,087	\$138,725	\$1,152,812	\$83,713	\$26,355	\$526,135	84.90	\$183,066	\$60,252	\$263,153
Atlantic & St. Lawrence.....3 mos.	351	2,697,639	419,076	3,116,715	251,027	83,609	1,637,670	89.60	342,425	152,984	495,409
Chic., Det. & Canada Gr. Tr. Jet.....Mar.	166	252,598	33,507	286,105	32,141	3,024	154,613	74.60	77,267	60,367	117,634
Det., Gr. Haven & Milwaukee.....3 mos.	166	758,462	101,211	859,673	75,003	9,682	463,410	79.30	186,651	135,907	322,558
Great Northern.....Mar.	62	215,171	5,867	221,038	22,024	3,757	82,239	52.00	112,303	105,059	16,244
Green Bay & Western.....3 mos.	62	54,568	27,752	82,320	32,577	10,988	209,048	49.90	308,712	287,032	21,680
Gulf & Ship Island.....Mar.	194	353,247	42,049	395,296	67,389	8,509	217,709	84.40	308,966	58,916	367,882
Gulf, Mobile & Northern.....3 mos.	194	878,918	112,733	991,651	98,984	26,566	616,869	87.40	113,274	111,935	2,339
Great Northern.....Mar.	8,265	5,693,878	1,146,504	6,840,382	923,743	139,719	3,185,368	82.30	1,340,235	731,923	608,312
Green Bay & Western.....3 mos.	8,265	14,051,012	3,145,062	17,196,074	2,321,808	378,297	9,221,024	89.40	2,026,333	346,527	2,372,860
Gulf & Ship Island.....Mar.	262	114,966	22,032	136,998	19,984	2,383	49,234	64.50	52,331	44,331	8,000
Gulf, Mobile & Northern.....3 mos.	262	267,561	58,916	326,477	53,033	6,391	256,174	72.90	95,138	71,138	24,000
Hocking Valley.....Mar.	307	190,789	33,706	224,495	33,727	8,376	69,375	70.70	70,114	58,235	11,879
Illinois Central.....Mar.	307	528,264	106,313	634,577	112,509	22,309	210,260	75.90	162,446	108,724	53,722
International & Great Northern.....3 mos.	436	324,355	34,298	358,653	61,387	13,571	124,892	71.20	107,397	90,147	17,250
Kansas City, Mex. & Orient.....Mar.	436	875,374	103,607	978,981	169,905	40,462	357,108	76.10	242,706	192,168	50,538
Kansas City Southern.....Mar.	348	1,092,018	83,566	1,175,584	246,083	10,340	389,160	62.90	435,492	364,884	70,608
Kansas City Southern.....3 mos.	348	2,844,739	247,114	3,091,853	641,905	35,126	1,108,028	67.30	1,056,179	784,232	271,947
Kansas City Southern.....3 mos.	4,784	9,585,794	1,827,448	11,413,242	2,702,557	185,375	4,433,200	74.90	3,075,811	2,004,206	1,071,605
Yazoo & Miss. Valley.....Mar.	4,784	27,318,176	5,498,390	32,816,566	4,131,638	233,233	12,956,878	74.50	8,918,129	5,891,666	3,026,463
International & Great Northern.....Mar.	1,381	1,241,081	298,097	1,539,178	308,808	23,741	647,521	81.40	305,513	187,013	118,500
International & Great Northern.....2 mos.	1,381	3,174,819	931,425	4,106,244	856,331	76,528	1,900,843	89.50	456,492	100,918	355,574
International & Great Northern.....3 mos.	1,159	784,912	178,197	963,109	219,832	25,948	480,138	84.70	167,546	134,018	33,528
Kansas City, Mex. & Orient.....Mar.	1,159	2,244,058	550,435	2,794,493	466,163	77,568	1,486,465	88.10	372,384	269,473	102,911
Kansas City, Mex. & Orient.....3 mos.	272	93,343	10,042	103,385	31,440	4,940	62,738	115.50	17,146	25,481	8,335
Kan. City, Mex. & Orient of Tex.....Mar.	272	279,188	28,043	307,231	85,437	12,548	186,646	113.80	45,908	70,886	25,072
Kan. City, Mex. & Orient of Tex.....3 mos.	465	126,273	10,343	136,616	43,463	4,774	88,819	111.60	16,979	23,113	34,511
Kansas City Southern.....Mar.	465	313,873	29,939	343,812	77,533	13,273	238,641	127.90	102,202	120,362	158,888
Kansas City Southern.....3 mos.	767	1,218,175	155,859	1,374,034	300,650	33,339	593,546	1,062.20	32,733	38,474	39,871
Texarkana & Ft. Smith.....Mar.	767	3,428,227	456,464	3,884,691	507,664	107,532	1,600,506	1,948.00	118,070	134,528	133,768
Texarkana & Ft. Smith.....3 mos.	81	105,456	13,912	119,368	17,227	4,303	53,715	69.10	31,910	25,574	32,977
Kansas City Terminal.....Mar.	81	398,165	40,969	439,134	72,829	15,328	155,704	61.90	104,025	85,016	19,009
Kansas City Terminal.....3 mos.	27	231,127	12,010	243,137	69,700	5,078	84,202	73.60	89,933	80,732	9,201
Kansas, Okla. & Gulf.....Mar.	314	590,062	35,705	625,767	120,620	13,028	241,721	73.60	171,059	143,476	27,583
Lake Superior & Ishpeming.....Mar.	33	3,012	101	3,113	10,038	195	8,387	1,062.20	32,733	38,474	39,871
Lake Superior & Ishpeming.....3 mos.	33	5,581	313	5,894	11,213	609	26,391	1,948.00	118,070	134,528	133,768
Lake Terminal.....Mar.	13	.....	.....	.....	25,341	.....	118,179	61.90	104,025	85,016	19,009
Lehigh & Hudson River.....Mar.	96	259,687	3,517	263,204	44,960	1,467	97,115	63.40	99,813	89,635	10,178
Lehigh & Hudson River.....3 mos.	96	662,323	11,770	674,093	141,599	4,480	260,793	71.30	201,133	171,079	30,054
Lehigh & New England.....Mar.	237	463,922	2,197	466,119	94,210	15,133	326,834	69.30	145,305	133,275	12,030
Lehigh & New England.....3 mos.	237	1,189,892	6,465	1,196,357	519,107	28,229	418,357	92.70	89,216	46,280	42,936
Lehigh Valley.....Mar.	1,334	5,893,882	455,597	6,349,479	1,330,059	105,628	2,580,222	78.00	1,480,681	1,253,692	226,989
Lehigh Valley.....3 mos.	1,334	14,801,315	1,422,334	16,223,649	4,616,508	311,579	7,412,831	83.20	2,899,954	2,226,624	673,330
Los Angeles & Salt Lake.....Mar.	1,146	1,062,667	372,696	1,435,363	380,034	46,476	536,034	86.00	219,949	109,275	110,674
Louisiana & Arkansas.....Mar.	302	241,892	33,606	275,498	1,054,829	130,559	3,863,884	87.50	550,422	221,785	328,637
Louisiana & Arkansas.....3 mos.	302	623,663	96,540	720,203	60,977	7,656	218,938	77.30	64,433	45,154	19,279
Louisiana Ry. & Nav. Co.....Mar.	343	270,661	29,881	300,542	36,389	12,116	227,389	81.90	133,729	75,643	58,086
Louisiana Ry. & Nav. Co.....3 mos.	343	671,120	90,727	761,847	107,249	28,123	339,608	82.90	138,111	89,287	48,824
Louisville & Nashville.....Mar.	5,038	8,387,596	1,633,085	10,020,681	2,765,111	203,498	4,111,742	83.50	1,759,530	1,456,406	303,124
Louisville & Nashville.....3 mos.	5,038	21,898,781	5,007,994	26,906,775	7,960,426	637,197	11,524,615	87.10	3,641,300	2,730,031	911,274
Louisville, Hen. & St. Louis.....Mar.	199	183,803	52,577	236,380	44,365	6,604	85,540	72.60	68,838	60,088	8,750
Louisville, Hen. & St. Louis.....3 mos.	199	471,507	137,683	609,190	122,543	18,486	240,722	81.00	126,189	99,910	26,279
Maine Central.....Mar.	1,215	1,368,810	355,112	1,723,922	410,711	13,147	802,302	81.10	349,600	250,184	99,416
Maine Central.....3 mos.	1,215	3,640,925	957,147	4,598,072	1,078,471	35,964	4,250,286	86.30	677,459	379,907	297,552
Midland Valley.....Mar.	383	298,874	66,301	365,175	47,597	4,496	119,017	86.00	148,332	136,169	12,163
Midland Valley.....3 mos.	383	801,677	185,858	987,535	131,575	13,625	340,734	65.00	357,689	321,909	35,780
Minneapolis & St. Louis.....Mar.	1,649	1,230,254	174,863	1,405,117	300,250	21,178	682,151	83.10	128,168	187,467	40,281
Minneapolis & St. Louis.....3 mos.	1,649	3,297,154	459,316	3,756,470	769,666	71,091	1,895,502	82.90	695,017	509,649	185,368
Min., St. Paul & S. S. Marie.....Mar.	4,363	2,409,393	524,411	2,933,804	583,478	38,248	1,608,146	84.00	271,979	261,757	10,222
Mississippi Central.....Mar.	4,363	6,055,744	1,522,314	7,578,058	1,144,733	167,479	8,083,636	97.10	243,314	500,948	257,627
Mississippi Central.....3 mos.	258	115,192	14,958	130,150	29,124	5,208	42,545	74.40	34,425	28,164	6,261
Mt., Kansas & Texas.....Mar.	262	302,922	47,544	350,466	48,038	16,931	126,028	84.50	25,262	37,470	12,212
Mt., Kansas & Texas.....3 mos.	1,670	1,760,471	448,554	2,209,025	412,810	47,196	1,502,770	60.90	963,020	772,847	190,173
Mt., Kansas & Texas.....3 mos.	1,670	4,707,637	1,338,739	6,046,376	1,351,597	145,169	4,584,251	68.20	2,137,831	1,703,109	434,722



## REVENUES AND EXPENSES OF RAILWAYS

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1922—CONTINUED

Name of road.	Average mileage operated during period.	Operating revenues			Operating expenses			Operating ratio.	Net from railway operations.	Operating income (or loss).	Net after rentals 1921.
		Freight.	Passenger. (inc. misc.)	Total.	Way and structures.	Maintenance of equip-ment.	Traffic.				
Mo., Kan. & Texas of Texas.....	Mar. 1,737	\$1,187,166	\$92,237	\$1,279,403	\$190,502	\$193,787	\$41,317	71.90	\$491,865	\$440,049	\$166,422
Wichita Falls & Northwestern.....	3 mos. 1,737	3,228,456	1,192,190	4,420,646	646,190	662,567	127,372	78.00	1,064,514	909,236	211,480
Missouri Pacific.....	Mar. 329	2,751,866	62,193	2,814,059	363,672	367,672	161,276	97.50	30,320	8,968	34,106
Mobile & Ohio.....	3 mos. 1,165	3,481,632	397,871	3,879,503	4,083,080	512,191	1,646,495	92.40	330,622	322,822	77,800
Monongahela.....	Mar. 106	539,186	31,447	570,633	46,007	37,279	13,281	82.40	1,521,149	1,129,650	82,849
Monongahela Connecting.....	3 mos. 106	1,276,938	91,732	1,368,670	138,463	162,119	31,293	84.80	3,591,155	2,417,332	477,450
Montour.....	Mar. 56	121,422	745	122,167	25,070	35,669	914	88.70	23,773	18,615	25,821
Nashville, Chatt. & St. Louis.....	3 mos. 1,258	2,359,359	2,319	2,361,678	55,382	99,171	81,479	88.70	73,324	38,236	79,856
Nevada Northern.....	Mar. 165	16,612	3,131	19,743	265,756	559,401	82,701	95.80	16,200	15,824	21,786
Newburgh & South Shore.....	3 mos. 167	41,940	9,211	51,151	703,328	1,404,814	218,153	96.20	1,554	70,424	150,829
New Orleans Great Northern.....	Mar. 274	186,432	31,885	218,317	25,070	35,669	914	88.70	23,773	18,615	25,821
New York Central.....	3 mos. 6,098	18,094,764	6,194,805	24,289,569	2,854,786	7,153,972	947,457	78.40	15,916,073	11,141,053	4,775,020
Cincinnati Northern.....	Mar. 244	349,289	15,689	364,978	83,478	58,542	4,701	59.50	150,669	124,413	30,457
Cleve., Cin., Chic. & St. Louis.....	3 mos. 2,415	5,648,376	1,920,019	7,568,395	1,348,629	1,348,629	112,365	65.30	318,375	234,430	30,144
Indiana Harbor Belt.....	Mar. 119	290,426	46,551	336,977	1,890,676	4,345,475	321,613	57.70	318,375	234,430	30,144
Kanawha & Mich.....	3 mos. 176	823,827	133,537	957,364	152,419	152,419	12,992	84.60	153,742	68,988	105,004
Lake Erie & Western.....	Mar. 718	702,209	37,183	739,392	114,875	179,437	17,856	84.90	116,242	71,049	58,923
Michigan Central.....	3 mos. 1,862	4,761,901	1,192,486	5,954,387	636,890	1,622,741	291,790	85.40	314,962	184,475	172,114
Pittsburgh & Lake Erie.....	Mar. 227	2,092,246	192,931	2,285,177	1,819,180	4,300,491	97,139	78.60	3,719,770	2,917,781	801,989
Toledo & Ohio Central.....	3 mos. 503	2,286,440	183,668	2,470,108	2,534,245	3,744,667	661,878	105.10	302,242	537,347	235,122
N. Y., Chicago & St. Louis.....	Mar. 523	2,407,253	76,234	2,483,487	648,264	1,188,936	163,868	65.00	887,583	765,185	168,161
N. Y., New Haven & Hartford.....	Mar. 1,986	5,421,639	3,706,669	9,128,308	1,012,995	1,977,576	62,845	75.00	2,033,241	1,667,531	365,710
Central New England.....	3 mos. 295	1,774,895	57,245	1,832,140	1,800,438	2,946,667	331,796	88.60	396,279	231,201	105,078
N. Y., Ontario & Western.....	Mar. 569	2,164,938	351,796	2,516,734	2,946,667	3,744,667	661,878	84.40	396,279	231,201	105,078
Norfolk & Western.....	Mar. 2,237	6,579,437	650,768	7,230,205	7,497,899	927,065	216,230	65.00	887,583	765,185	168,161
Norfolk Southern.....	3 mos. 930	1,522,186	111,227	1,633,413	1,898,396	2,306,160	167,969	71.90	2,110,412	1,659,795	450,617
Northern Pacific.....	Mar. 6,556	5,807,723	1,180,049	6,987,772	804,959	1,848,791	131,731	78.50	1,637,148	885,259	1,600,077
Northwestern Pacific.....	3 mos. 507	315,306	176,316	491,622	2,300,645	5,287,133	388,490	90.10	1,931,230	31,549	338,802
Pennsylvania.....	Mar. 7,323	32,978,761	9,168,491	42,147,252	4,384,066	11,400,726	427,823	73.60	11,979,979	10,603,216	1,376,763
Balti., Ches. & Atlantic.....	3 mos. 87	185,657	63,350	249,007	25,520	28,576	3,810	125.50	66,377	66,377	13,150
Cumberland Valley & Mis.....	Mar. 33	82,175	5,839	88,014	8,978	21,334	745	60.80	115,211	102,427	88,297
Cincinnati, Lebanon & No.....	3 mos. 76	268,823	18,238	287,061	20,968	54,113	2,322	107.00	115,100	107,000	12,657
Grand Rapids & Ind.....	Mar. 575	1,379,913	160,651	1,540,564	1,970,031	2,907,479	1,543	86.50	109,656	78,268	59,389
Long Island.....	3 mos. 398	2,097,209	3,392,037	5,489,246	450,000	1,183,599	41,726	87.80	733,851	359,806	430,215

# REVENUES AND EXPENSES OF RAILWAYS MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1922—CONTINUED

Name of road.	Average mileage operated during period.	Operating revenues			Operating expenses			Operating ratio.	Net from railway operations.	Operating income (or loss).	Net after rentals, 1921.
		Freight.	Passenger.	Total.	Way and structures.	Maintenance of equipment.	Traffic.				
Maryland, Dela. & Va. ....	82	\$61,264	\$15,894	\$77,158	\$8,969	\$34,789	\$594	124.10	\$19,410	\$20,940	\$21,358
N. Y., Phila. & Norfolk. ....	122	492,820	70,440	563,260	10,303	177,938	2,303	133.90	65,483	68,436	69,427
Pitts., Cin., Chic. & St. Louis. ....	122	1,207,325	199,809	1,407,134	59,011	164,380	7,757	99.00	80,221	15,659	57,512
West Jersey & Seashore. ....	2,412	6,389,187	1,498,501	7,887,688	151,324	450,359	23,202	75.40	2,124,188	1,799,249	1,609,904
Peoria & Pekin Union. ....	3 mos.	1,412	15,837,196	4,556,121	22,508,222	1,815,735	6,205,538	82.60	3,912,355	2,991,440	2,438,851
Pere Marquette. ....	3 mos.	359	424,517	988,690	164,156	190,787	13,459	88.30	115,712	103,286	87,417
Philadelphia & Reading. ....	3 mos.	1,247,785	2,503,787	3,751,572	438,995	572,472	42,554	101.20	29,287	29,707	407,501
Atlantic City. ....	3 mos.	17,814	2,860	174,336	15,237	19,326	147	65.40	60,325	45,325	68,174
Perkiomen. ....	3 mos.	41	80,781	6,738	6,333	4,170	111	66.60	163,827	122,327	196,440
Port Reading. ....	3 mos.	21	232,510	20,810	263,323	19,364	324	72.10	937,892	775,925	595,812
Pittsburg & Shawmut. ....	3 mos.	21	230,049	20,810	263,323	19,364	324	72.10	937,892	775,925	595,812
Pittsburg & West Virginia. ....	3 mos.	21	230,049	20,810	263,323	19,364	324	72.10	937,892	775,925	595,812
Pittsburg, Shawmut & No. ....	3 mos.	21	230,049	20,810	263,323	19,364	324	72.10	937,892	775,925	595,812
Quincy, Omaha & Kansas City. ....	3 mos.	252	64,374	23,424	95,067	17,408	7,688	105.00	25,370	32,701	27,599
Richmond, Fred. & Potomac. ....	3 mos.	117	435,330	335,107	912,709	83,376	22,811	63.80	32,783	32,636	47,115
Rutland. ....	3 mos.	415	793,634	113,008	498,473	93,068	9,291	86.20	68,648	48,288	52,918
St. Louis, San Francisco. ....	4,760	4,722,981	1,411,987	6,134,968	859,372	1,289,134	21,896	75.20	1,615,970	1,284,410	1,309,855
Ft. Worth & Rio Grande. ....	3 mos.	4,760	12,927,073	4,055,910	18,217,507	2,174,924	7,088,867	74.60	4,633,809	3,701,892	3,837,393
St. Louis, San Fran. & Tex. ....	3 mos.	235	63,087	26,818	99,418	39,748	2,759	125.10	24,913	28,778	36,222
St. Louis Southwestern. ....	3 mos.	134	103,462	76,501	297,695	66,641	8,118	123.40	69,842	82,168	94,999
St. Louis Southwestern of Tex. ....	3 mos.	134	103,462	76,501	297,695	66,641	8,118	123.40	69,842	82,168	94,999
San Antonio & Aransas Pass. ....	3 mos.	739	922,899	175,770	1,117,226	275,000	27,993	104.40	5,393	7,456	27,196
San Antonio, Uvalde & Gulf. ....	3 mos.	317	51,797	15,281	83,516	11,834	2,577	94.80	19,709	13,620	49,125
Seaboard Air Line. ....	3 mos.	3,563	2,913,811	789,884	4,124,559	371,542	129,677	62.40	589,296	518,303	442,295
Southern. ....	3 mos.	6,571	8,054,334	2,222,300	11,038,652	1,496,614	212,981	65.90	1,406,021	1,083,579	1,020,642
Alabama Gr. Southern. ....	3 mos.	318	1,658,038	376,524	2,134,562	246,359	59,842	62.40	2,553,145	2,092,848	1,829,583
Cin., N. O. & Tex. Pacific. ....	3 mos.	338	1,208,375	235,167	1,500,868	158,134	28,380	77.90	393,225	333,164	339,889
Ga. Southern & Florida. ....	3 mos.	402	275,802	97,697	401,780	68,406	10,229	84.40	62,856	44,038	11,490
New Orleans & Northeastern. ....	3 mos.	207	423,209	71,190	546,490	68,628	10,229	83.40	107,533	70,881	64,605
Northern Alabama. ....	3 mos.	110	92,540	11,208	106,104	20,810	3,404	85.20	22,043	99,254	71,649
Southern Pacific. ....	3 mos.	7,119	9,153,852	3,498,118	13,910,253	1,925,837	228,665	73.50	3,685,390	2,335,372	2,310,567
Arizona Eastern. ....	3 mos.	382	196,265	85,975	282,240	27,240	5,103	63.80	189,660	116,765	47,959
Atlantic S. S. Lines. ....	3 mos.	...	899,343	62,376	1,018,549	13,634	21,953	76.20	242,701	230,808	231,288
Cal., Harrisburg & S. Ont. ....	3 mos.	1,379	1,378,659	365,264	1,855,038	323,356	73,187	77.90	642,427	605,830	606,790
	3 mos.	1,379	3,775,740	1,059,129	5,140,477	958,876	117,442	86.10	713,760	558,047	421,014



May 13, 1922

RAILWAY AGE

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1922—CONTINUED

Name of road.	Average mileage operated during period.	Operating revenues				Operating expenses				Operating ratio.	Net from railway operations.	Operating income (or loss).	Net rentals after 1921.
		Freight.	Passenger.	Total (inc. misc.)	Maintenance of way and structures.	Equipment.	Traffic.	Portation.	General.	Total.			
Houston & Tex. Central.....	Mar. 923	\$842,326	\$299,812	\$1,142,138	\$213,046	\$227,693	\$23,125	\$437,507	\$42,403	\$942,560	\$750	\$229,412	\$183,869
Houston, East & West Tex. ....	Mar. 923	2,634,171	891,179	3,525,350	621,972	685,735	69,117	1,354,888	122,569	2,850,775	869,619	736,149	589,172
Houston, East & West Tex. ....	Mar. 191	187,638	37,671	225,309	48,983	148,837	9,332	310,728	8,063	210,000	26,272	15,353	17,727
Louisiana Western .....	Mar. 207	522,643	108,630	631,273	141,607	148,837	9,332	310,728	25,412	632,731	31,745	15,353	26,614
Morgan's La. & Tex. R.R. & S.S. Mar. 400	1,364,283	297,454	85,648	403,102	62,992	60,676	9,736	123,500	19,104	280,125	126,592	99,218	95,465
Texas & New Orleans .....	Mar. 507	1,718,743	442,498	2,161,241	420,428	599,464	27,357	825,863	55,785	1,088,514	305,370	222,469	212,038
Spokane International .....	Mar. 165	542,526	150,258	692,784	151,166	22,283	10,325	268,530	25,008	650,335	80,729	300,637	186,218
Spokane, Portland & Seattle.....	Mar. 549	1,102,179	348,607	1,450,786	296,672	36,324	14,605	276,457	59,549	1,088,514	372,386	300,637	212,038
Spokane Central .....	Mar. 292	1,170,336	10,953	1,181,289	12,006	22,283	2,591	36,899	5,944	1,908,317	35,758	30,228	17,709
Tennessee Central .....	Mar. 37	.....	.....	.....	37,498	24,166	9,036	110,067	18,613	192,333	70.50	64,278	84,017
Term. R.R. Assn. of St. Louis .....	Mar. 37	.....	.....	.....	37,498	24,166	9,036	110,067	18,613	192,333	70.50	64,278	84,017
E. St. Louis Connecting .....	Mar. 1	.....	.....	.....	37,498	24,166	9,036	110,067	18,613	192,333	70.50	64,278	84,017
St. L. Mchts. Br. Term. ....	Mar. 9	.....	.....	.....	37,498	24,166	9,036	110,067	18,613	192,333	70.50	64,278	84,017
St. Louis Transfer .....	Mar. 6	.....	.....	.....	37,498	24,166	9,036	110,067	18,613	192,333	70.50	64,278	84,017
Texas & Pacific .....	Mar. 1,952	1,717,500	550,592	2,268,092	490,576	549,748	47,366	971,816	88,176	1,381,725	63.10	136,058	120,168
Toledo, Peoria & Western .....	Mar. 454	788,028	26,823	814,851	113,378	133,819	26,911	278,346	72,252	1,260,614	68.90	71,146	58,520
Toledo, St. Louis & Western .....	Mar. 368	2,622,693	141,149	2,763,842	583,333	394,143	67,915	786,816	12,600	1,016,118	103.20	117,256	14,102
Trinity & Brazos Valley .....	Mar. 368	982,809	65,694	1,048,503	239,436	219,931	9,585	374,654	37,458	878,923	81.10	204,149	183,026
Ulster & Delaware .....	Mar. 128	82,080	18,811	100,891	16,455	19,183	1,738	61,275	23,165	59,607	82.70	22,337	16,335
Union .....	Mar. 45	.....	.....	.....	16,455	19,183	1,738	61,275	23,165	59,607	82.70	22,337	16,335
Union Pacific .....	Mar. 3,665	6,134,315	1,298,832	7,433,147	1,598,521	4,812,379	355,534	7,197,831	932,473	15,291,362	69.80	6,630,074	4,927,062
Oregon Short Line .....	Mar. 2,218	1,615,677	426,764	2,042,441	2,232,138	393,779	445,383	61,651	973,625	125,493	65.90	2,778,169	2,209,996
Oreg. Wash. R.R. & Nav. ....	Mar. 2,218	1,615,677	426,764	2,042,441	2,232,138	393,779	445,383	61,651	973,625	125,493	65.90	2,778,169	2,209,996
St. Joseph & Gr. Isl. ....	Mar. 258	.....	.....	.....	16,455	19,183	1,738	61,275	23,165	59,607	82.70	22,337	16,335
Utah .....	Mar. 104	133,476	1,155	134,631	135,258	13,350	42,628	191	26,260	4,198	64.05	48,631	42,040
Virginian .....	Mar. 526	4,210,486	679,613	4,890,099	1,774,146	1,833,882	174,557	2,892,496	373,224	5,265,720	91.80	509,140	34,883
Wabash .....	Mar. 2,472	1,253,561	1,951,052	3,204,613	1,503,216	1,833,882	174,557	2,892,496	373,224	5,265,720	91.80	509,140	34,883
Western Maryland .....	Mar. 804	3,952,414	215,210	4,167,624	4,485,522	585,748	908,754	91,782	1,589,644	39,046	77.70	1,152,001	961,211
Western Pacific .....	Mar. 1,042	589,159	144,607	733,766	132,395	161,176	161,176	31,220	353,639	122,478	93.60	50,127	36,100
Wheeling & Lake Erie .....	Mar. 511	1,375,293	199,788	1,575,081	337,632	357,632	695,541	53,379	1,220,067	105,332	92.60	171,377	81,177

\*Deficit due to adjustment.

## Wage Statistics for February

The Interstate Commerce Commission reports that the number of employees reported by Class I roads for the month of February, 1922, compared with January returns, shows a decrease of 6,974. Compensation decreased \$10,655,212. Compared with the same month last year the employment shows a decrease of 131,503. A comparison of the number of employees and their compensation, by months, for the period covered by the new classification follows:

CLASS I STEAM ROADS		
Month	Number of employees	Total compensation
July, 1921	1,634,872	\$214,339,385
August, 1921 <sup>1</sup>	1,679,927	227,745,895
September, 1921 <sup>1</sup>	1,718,330	223,972,822
October, 1921 <sup>1</sup>	1,754,136	237,602,959
November, 1921 <sup>1</sup>	1,732,353	225,304,006
December, 1921 <sup>1</sup>	1,637,151	214,921,396
January, 1922 <sup>1</sup>	1,552,014	205,178,639
February, 1922 <sup>1</sup>	1,545,040	194,523,427

<sup>1</sup>Excludes Detroit, Toledo & Ironton Railroad.

## Two Years' Work of the Labor Board

During the first two years of its existence the United States Railroad Labor Board passed upon 632 questions, according to a report which it has just prepared. In the calendar year 1920 it issued 42 decisions, 14 interpretations, and 6 addenda, while in 1921 it prepared 539 decisions, 17 interpretations, and 14 addenda. During the latter year the board issued two major decisions applicable to rules governing the working conditions of employees, Nos. 222 and 501, the first covering shop craft employees and the latter maintenance of way workers. Since the first of the present year the board has rendered additional decisions governing the working conditions of clerical workers, signalmen, train dispatchers, express employees, trainmen and oilers, supervisors of mechanics and telegraphers.

Decision No. 2 of the board, which was issued on July 20, 1920, and was retroactive to May 1 of that year, covered 140 parent companies and their subsidiaries, and several terminal companies, the exact number not being known. Devision No. 33 (electric lines decision) affected 11 companies, while Decision No. 108 (short line decision) was applied to 67 companies, the three decisions enumerated above totaling 235 companies in all. It is estimated by the board that the annual increase in payrolls due to Decision No. 2 amounted to \$558,180,134.56, this figure covering straight time earnings for all employees except those engaged in train and engine service for whom all time was taken into consideration. The estimated annual decrease in the payrolls due to Decision No. 147 amounted to \$378,004,675.80, this figure also covering straight time earnings for all employees with the exception of those in train and engine service as mentioned above.

The number of employees in the service of the companies has fluctuated widely. The compensation report compiled by the Interstate Commerce Commission for the month of December, 1921, shows that there were then 1,637,151 men in service, while the report for August, 1920, gives the number as 2,197,784, these figures indicating the minimum and maximum employment. The decisions rendered by the board during 1920 and 1921 involved 45 employees' organizations.

## Wage Statistics for Last Half of 1921

The Interstate Commerce Commission has issued a consolidated statement of its wage statistics of American railroads for the six months July-December, 1921, during which its new classification of railroad employees was in effect, as well as the reduction of wages ordered by the Railroad Labor Board effective on July 1. The average number of persons in the employ of the railroads for this period shows a decrease of 416,384, or 19.7 per cent, as compared with the same period of 1920. Compensation decreased \$690,829,775 or 33.9 per cent. The average number employed at the middle of the month was 1,692,794 and the average number of full-time positions was 1,592,755, while the total compensation for the six months was \$1,343,886,463, of which \$70,478,076 represented overtime and \$55,487,464 "other compensation." In the next column a table is shown giving a recapitulation, to which has been added a column showing the average earnings per employee per month.

## COMPENSATION OF RAILROAD EMPLOYEES, HALF YEAR

Average number of employees at middle of month	Average number of full-time positions	Group	Straight time actually worked	Per cent of total compensation	Daily or hourly earnings	Overtime paid for	Per cent of total compensation	Daily or hourly earnings	Other compensation	Total	Average earnings per employee per month
15,187	15,157	I. Executives, officials, and staff assistants..	\$37,994,940	99.62	\$15.81	\$1,959	....	\$8.99	\$142,791	\$38,139,690	\$419
47,309	46,408	II. Professional, clerical, and general.....	48,741,518	93.20	6.73	258,405	1.69	5.13	1,196,263	50,196,186	177
227,345	217,022	III. Maintenance of way and structures....	153,962,347	96.87	.58	3,410,484	2.94	.58	9,926,614	167,299,445	123
4,604	363,038	IV. Maintenance of equipment and stores..	6,486,128	94.06	8.73	7,087	4.08	6.63	38,551	6,531,766	236
378,442	14,876	V. Transportation (other than train, engine, and yard) .....	195,539,531	95.24	.43	6,122,288	3.92	.49	364,801	202,026,620	89
14,995	448,436	VI (a). Transportation (train and engine service, tenders, and hostlers) .....	21,615,688	95.58	8.84	41,556	12.11	7.55	464,965	22,122,210	246
26,903	26,739	VI (b). Transportation (train and engine service, tenders, and hostlers) .....	15,763,344	76.99	3.30	193,456	1.93	2.65	6,785,252	367,040,702	128
180,834	176,312	VI (c). Transportation (train and engine service, tenders, and hostlers) .....	125,298,071	95.58	.54	5,613,171	1.93	.64	1,172,607	16,033,511	99
5,945	5,819	VI (d). Transportation (train and engine service, tenders, and hostlers) .....	8,636,219	95.58	8.43	36,436	1.93	8.55	390,038	9,062,693	254
17,656	17,160	VI (e). Transportation (train and engine service, tenders, and hostlers) .....	14,439,053	95.58	.61	429,568	1.93	.73	211,287	15,079,908	142
297,274	257,184	VI (f). Transportation (train and engine service, tenders, and hostlers) .....	245,024,567	76.99	.73	38,527,733	12.11	1.00	34,717,583	318,269,893	178
115,037	113,603	All employees .....	139,237,837	90.63	7.47	538,899	5.24	4.01	2,309,320	142,086,056	142
1,577,737	1,479,152	Total number of employees and compensation .....	1,078,683,086	90.63	.58	69,939,177	5.24	.80	53,178,144	1,201,800,407	142
1,692,794	1,592,755	Total number of employees and compensation .....	1,217,920,923	....	....	70,478,076	....	....	55,487,464	1,343,886,463	142



## Railroad Committee Makes Recommendations Regarding Consolidation Hearings

Railroad counsel from all parts of the country met at Washington on Tuesday to consider recommendations to the Interstate Commerce Commission as to the character of the basic data which should be furnished by the railroads in the hearings on the commission's tentative consolidation plan. The recommendations of the roads were then presented on Wednesday to Commissioner Hall by a sub-committee of six, headed by R. V. Fletcher, general solicitor of the Illinois Central, and including S. T. Bledsoe, general counsel of the Atchison, Topeka & Santa Fe; J. P. Blair, general counsel of the Southern Pacific; L. E. Jeffries, vice-president and general counsel of the Southern; E. S. Jouett, vice-president and general counsel of the Louisville & Nashville, and B. B. Cain, vice-president of the American Short Line Railroad Association. The date for the resumption of hearings was also considered. The hearing on April 24 on that part of the tentative consolidation plan applying to the Southeast was adjourned because the railroads had not understood what information the commission desired and most of them had nothing to offer except as they had objections to point out to the tentative plan.

## Bureau of Mines Investigating Coal Storage

The obvious importance of a clear understanding today of all elements involved in the storage of coal, for industrial and other purposes, has led the Bureau of Mines, in conjunction with the Department of Commerce to undertake an investigation of the question in which co-operation and advice of the railroads is earnestly requested.

While there has been much agitation of the possibilities of coal storage in the way of giving more regular mining and movement of coal, but little exact information is available especially regarding costs of handling and transportation in and out of storage, as well as of the investment, fixed charges, etc., involved.

The bureau requests therefore that the railroads give it the benefit of their views and conclusions on the various items listed below, calling attention particularly to the value of exact data and actual working costs. The various items to be covered are as follows:

- Method of storage.
  - Under water or not—
  - Closed sheds or in the open—
  - Kind of floor or ground.
- Location of storage with reference to point where coal is to be used.
- Quantity stored, maximum—average.
- Spontaneous combustion, methods of preventing.
- Handling fires, method of
- Devices used for observing temperature and inspection.
- Danger point as regards temperature.
- Deterioration in sizes and also in heating value in stored coal.
- In your practice what tonnage can be stored per acre of available space.
- Depth of pile, maximum allowed.
- Kinds of coal stored.
- District from or trade name.
- Size stored.
- Is coal screened before storing.
- How long coal must be stored.
- Best time of year to store.
- Cost of storage plant and cost of maintenance.
- Cost of handling in and out of storage.
- Transportation to pile.
- Transportation from pile to point of use.
- Effect of climate on stored coal, if any.
- Costs of unloading and releasing.
- Method of handling in and out of storage.
- Cost of investment and fixed charges.

Compliance with this request will be greatly appreciated and any data furnished will be treated as confidential, if so desired. All communications should be addressed to F. R. Wadleigh, commercial engineer, Bureau of Mines, Chief, Coal and Coke Section, Fuel Division, Department of Commerce, Washington, D. C.

E. F. GRABLE, president of the United Brotherhood of Maintenance of Way Employees and Railway Shop Laborers, has called a conference, to be held at Atlanta on May 16, to discuss the withdrawal of the skilled men in that branch of the service in the southeast. The invitation has gone to all general chairmen and vice presidents on the different railroads in the southeastern and Pocahontas districts. J. O. Raley, formerly an international vice president of this organization, who was chosen president of the Order of Skilled Railway Maintenance of Way Employees at a meeting held in Atlanta, Georgia, a few weeks ago, is looked upon as an outlaw.

## Traffic News

The Chicago & North Western and the Union Pacific announce that the Denver Special, between Chicago, Ill., and Denver, Colo., will be restored on May 28.

The Marion (Ohio) Traffic Club elected the following officers at its annual meeting on April 13: President, D. R. Biggert, Marion National Mill; vice-president, M. B. Lindsay, Ohio Locomotive Crane Company; secretary, W. R. Aukland, Marion Steam Shovel Company, and treasurer, S. D. Ross, Huber Manufacturing Company.

The New York, Chicago & St. Louis has put on a new through daily passenger train each way between Chicago and Buffalo, with sleepers to and from New York over the Delaware, Lackawanna & Western. The eastbound train (No. 6) leaves Chicago at 2:40 p. m. and the westbound train connects with Lackawanna train No. 7, leaving New York at 6:30 p. m.

The Wisconsin State department of markets, Madison, has begun a movement to organize shippers for the purpose of "shipping intelligently," and incorporation papers of the "Wisconsin Agricultural Traffic Association" have been made out and filed. A campaign has been started to enlist the shippers of the state, especially farmers, as members. The state railroad commission, the federation of cheese-producers, the state branch of the American Society of Equity, the Wisconsin Farm Bureau Federation and other agricultural organizations are co-operating with the marketing department. W. P. Jones is in charge of organization. Memberships are being sold to individuals and corporations engaged in shipping farm products for \$25 a year. It is proposed to furnish members with complete information as to routes, tariffs and other transportation essentials; to provide for the adjustment and collection of overcharges in transportation of freight, baggage, express, or passengers; adjustment of claims for loss or damage, and prosecution of proceedings before rate committees or commissions.

## Cheaper Sleeping Car Privileges

The railroads west of Chicago have modified their tariffs so that now only one railroad ticket is required from a passenger desiring to hold a section in a sleeping car; and two fares will be sufficient for a drawing room. Hitherto a passenger occupying a section had to have one and a half railroad tickets. The eastern lines have filed tariffs making the same change which, it is expected, will be allowed to go into effect on May 15.

## Coal Production

Production of coal has struck a temporary level a little above the 4-million-ton mark, according to the weekly bulletin of the Geological Survey. The output for the week of April 29 was 4,150,000 tons, and early reports indicate that the week of May 1-6 will show a like amount. Production of anthracite remains practically zero.

The total output of all coal—anthracite and bituminous—in the fourth week of the strike (April 24-29) was 4,156,000 tons. In the fourth week of the 1919 strike 5,334,000 tons of bituminous coal, and 1,759,000 tons of anthracite were produced, a total of 7,093,000 tons. Current weekly output of all coal is therefore running some 3,000,000 tons short of the 1919 experience.

Much the same rate of production obtained last week (May 1-6), the fifth of the strike. No significant break in the ranks of striking miners has occurred, although a small number of men have gone back to work in Texas. The number of non-union men on strike has not changed materially. The accumulation of unbilled cars of coal is slowly decreasing, but is still above normal. Demand is stiffening, and the latest district to report improvement is the Middle West, but the market is still not active enough to call out full production from mines remaining at work.

Day	1st week	2d week	3rd week	4th week	5th week
Monday	11,445	10,772	7,898	12,131	11,919
Tuesday	11,019	10,658	10,041	12,377	12,120
Wednesday	11,437	10,961	11,088	12,622	12,810
Thursday	11,090	11,482	11,193	11,981	12,460
Friday	11,296	10,714	11,596	12,362	
Saturday	8,888	8,501	10,194	11,295	

## Commission and Court News

### Interstate Commerce Commission

The commission has suspended until September 7, the operation of schedules which propose to reduce the rate on cement from Leeds, Ala., to Richmond, Va., from 29 cents per 100 lbs. to 21½ cents.

The commission has suspended until September 7, the operation of schedules published in a supplement to Agent F. A. Leland's tariff which propose to increase and reduce rates on cottonseed oil from various Oklahoma producing points to various Louisiana points.

The commission has suspended until September 7, the operation of certain schedules published by the Merchants & Miners Transportation Company, which propose increases in the rates on leather boots and shoes of 9½ cents per 100 lbs. from Boston, Mass., and Providence, R. I., to Petersburg, Richmond and South Richmond, Va.

The Interstate Commerce Commission has set aside its orders making increases in intrastate rates within the state of Texas to correspond to the interstate increases ordered by the commission in Ex Parte 74, because the Texas commission by an order entered April 26 has itself prescribed for observance after May 15 the increased rates ordered by the federal commission. The commission has also denied a petition for a re-hearing of the Texas case filed by the railroads.

### The Interstate Commerce Commission Now Working on Daylight Saving Schedule

Because the government departments at Washington are going on a daylight saving schedule on May 15 the Interstate Commerce Commission has announced that its hearings at Washington, which usually begin at 10:00 a. m., will begin at 9:00, and arguments, which usually begin at 10:30 will begin at 9:30. The hands of the clock are not to be changed but the government offices and business institutions of the city are to go to work an hour earlier and close an hour earlier.

### Certificates of Public Convenience Not Confined to New Lines

The Interstate Commerce Commission in conference on May 8, 1922, rescinded the following conference ruling which was adopted on April 8, 1921:

"That the applications which must be made to the commission for certificates of public convenience and necessity under paragraph (18) of section 1 of the Interstate Commerce Act are confined to new lines of railroad and extensions of lines of railroad to be constructed, or put in operation in interstate or foreign commerce, by carriers subject to the act, subsequent to the effective date of the paragraph, and to lines of railroad in existence prior to that date which were not then being used in interstate or foreign commerce, except that the term 'abandon,' as used in the paragraph applies to any line of railroad or portion thereof owned or operated by a common carrier subject to said act, and means entire cessation of operation thereof in interstate or foreign commerce; and that any such certificate granted by the commission applies to the property covered thereby, regardless of any change in the owner or operator of the property which may take place after the certificate is granted.

"That it is not necessary to secure from the commission a certificate of convenience and necessity for the acquirement of an ordinary trackage right; or for the discontinuance of the use of such trackage right, provided such discontinuance does not result in withdrawal of all service to the public upon the road or part of road over which such trackage right is exercised."

It is understood that this withdrawal will remove some questions which have arisen on applications for approval of the acquisition and operation of existing lines.

### State Commissions

The Memphis, Dallas & Gulf has petitioned the Arkansas Railroad Commission for permission to take up its track between Nashville, Ark., and Hot Springs, 86 miles. Hearings were held on April 26 and 27 and the records have been forwarded to the Interstate Commerce Commission for further action.

The Arizona Corporation Commission has denied the application of the Arizona & Swansea for leave to dismantle and abandon its line. The road extends from Bouse, Ariz., to Swansea, a distance of 21 miles, connecting with the Atchison, Topeka & Santa Fe at the former point. It was constructed in 1910 to serve the Clara Consolidated Gold & Copper Mining Company, located at Swansea. The commission decided that inasmuch as the scrap value of the road was small, and, that there is a better outlook for business within that territory, it would be to the interest of all parties concerned to maintain the line.

### Court News

#### Abandonment of Branch Not Special Injury to Shipper

The Montana Supreme Court holds that a mining company situated on a branch railroad cannot, in the absence of an express contract, claim damages for the abandonment of the branch because it has constructed and maintained a track at its own expense, though the branch was constructed specially to serve the mining company.—*Helena & Livingston I. & R. Co. v. Northern Pacific (Mont.)*, 204 Pac. 370.

#### Employee, Denied Passage on Pass, Has No Right to Become Blind Passenger

The Wisconsin Supreme Court holds that a railroad employee, denied passage on a train on which he is entitled to ride on a pass given him, must abide by the orders of the trainmen and seek redress, if he has any, otherwise than by endeavoring unlawfully to become a blind passenger on the train.—*Herschman v. Chicago, M. & St. P. (Wis.)*, 186 N. W. 613.

#### Liability for Loss of Shipments to Foreign Countries

In an action for damages for loss of a carload of vegetables, delivered to the defendant, Southern Pacific, for shipment to a point in Canada, the California Supreme Court holds that the Carmack Amendment, making initial carriers liable for loss caused by them or by connecting carriers, did not apply to a shipment to a foreign country, and the Cummins Act, extending the liability, does not apply to such a shipment before its adoption in March, 1915.—*McCaslin v. Southern Pacific (Cal.)*, 203 Pac. 742.

#### Not Liable for Loss When No Tariff Was Filed

The Texas Court of Civil Appeals holds that, under U. S. Comp. St., sec. 8569, par. 7, providing that no carrier shall engage in the transportation of passengers or property without filing and publishing a tariff, where a carrier has made no rate for solid silverware, it is not authorized to receive such property for shipment by freight, and as a contract therefor would be illegal under the statute, the carrier is not liable for the loss of such property taken as freight.—*Payne v. Bassett (Tex. Civ. App.)*, 235 S. W. 917.

#### Excessive Damages

The Missouri Supreme Court holds that, in an action for compensation under the Federal Employers' Liability Act for the death of a switchman, 29 years old, earning \$115 a month, leaving a wife, 28 years old, and a daughter 2 years old, a verdict for \$15,000 was excessive by \$3,000.—*Burtch v. Wabash (Mo.)*, 236 S. W. 338.

Compensation for death under the federal Employers' Liability Act is limited to the present value of the pecuniary loss to the defendant for whose benefit the action is brought; and the Kentucky Court of Appeals holds that where the utmost the deceased contributed to the plaintiff, his father, whose life expectancy was 11.68 years, was \$20 a month for board and \$60 a year for the plaintiff's clothing, a verdict for \$4,000 was excessive, and a new trial was granted.—*C. & O. v. Haggard's Admr. (Ky.)*, 235 S. W. 756.



## Foreign Railway News

### American Firms Win Bridge Contracts in Argentina

During the past few months American fabricators have been successful in securing some attractive bridge construction contracts from the Argentine State Railways, in keen competition with German and Belgian concerns, according to Commerce Reports. It appears that the local officials are not satisfied with the workmanship turned out by European shops, and preference was given to American bidders at prices which are really higher, considering that it is the practice of nearly all domestic companies to provide for payment in United States gold.

American bridge shop practice has been developed to a far higher degree than in the case of European manufacturers of like materials. This has been necessary because of the higher grade labor used in the United States. Multiple punch machines and spacing tables, such as are common in first-class shops in the United States, are almost unknown in Europe, where practically all work is drilled at a much higher cost of production, in spite of the lower wages paid to labor. American exporters, realizing that there is attractive business to be had in Argentina, are pursuing this market with a willingness to conform to local requirements, which, they state, are by no means unreasonable.

### London & North Western Adopts Council System for Dealing With Labor Matters

The London & North Western has announced its plan for the establishment of councils of employees and officers to bring about closer contact with the management, according to Modern Transport (London). The plan is in accordance with the Railways Act of 1921.

The plan provides for the formation of a council composed of not more than four members representing the employees and an equal number representing the management at every shop or station where 75 or more persons are employed. At places where fewer men are employed, a council of four representing the employees will confer with local officers. The purpose of these councils is to provide a recognized method of communicating with the employees and to give them a wider interest in the conditions under which their work is performed. The matters to be considered by the local committees are:

- (1) Suggestions for the satisfactory arrangement of working hours, etc.
- (2) Questions of physical welfare (safety appliances, first aid, accommodations for comfort, etc.)
- (3) Holiday arrangements.
- (4) Publicity regarding rules.
- (5) Suggestions as to improving efficiency.
- (6) Investigation of conditions tending to reduce efficiency.
- (7) Correct loading of freight.

Employee representatives are to be elected from among their number, each employee over 18 years of age being privileged to vote. Representatives must have been in service at least a year. Complaints by employees must be made directly to the company as heretofore and will then be referred by the company to the council.

Matters relating to the local application of the national agreements as to wages, working conditions, etc.; suggestions as to improved operation; points in which employees and management are mutually interested, such as increasing business and promoting economy; and subjects submitted by the local council—all these matters will be handled by sectional councils (likewise representing both employees and management), of which there are five, each covering the entire railway. These councils may not propose any changes inconsistent with rulings of the Central Wages Board or the National Wages Board.

The employee representation, Sectional Council No. 1, will be made up of stationmasters, agents, yard masters and traffic controllers (2 representatives); clerks (7 representatives); operating and freight traffic inspectors and foremen and dock supervisory staff (2 representatives); and inspectors and foremen in the locomotive, car engineering, signal, telegraph and tugboat departments (1 representative). Sectional Council No. 2 will be made up of

enginemen and motormen (12 representatives); No. 3 of signalmen, trainmen, porters, switchmen, car cleaners and car inspectors (12 representatives); No. 4 of freight house, delivery and dock forces (12 representatives); and No. 5 of maintenance of way and signal department employees and linemen (10 representatives).

The company will choose its representatives on each council from among its various officers. The plan provides for a railway council for the whole railway to deal with any matters which can properly come before a sectional council but which affect employees belonging to two or more sectional groups.

When agreements are arrived at by councils they are to be posted for the information of employees. Disagreements are referred to the trade unions, who confer with the railway managements, and, in the end if agreement is not reached, to the Central Wages Board.

### South African Electrification

A report has been issued by British consulting engineers concerning the electrification of a portion of the railroad from Durban to Glencoe Junction, South Africa. The work now in hand will cost approximately \$20,000,000, and will consist of electrifying the line from Pietermaritzburg to Glencoe Junction. The total length of line from Durban to Glencoe Junction is 249 miles and the section which will be electrified includes a little more than two-thirds of the total length of line. Traffic has increased to such an extent as to make electrification urgent on the line from Pietermaritzburg to Glencoe Junction in order to increase the capacity of the line. The line from Durban to Pietermaritzburg, however, is double tracked and electrification of that section is largely an economic question.

It is considered that double tracking from Pietermaritzburg to Glencoe Junction would enormously increase the capacity of the line, but that it is not a remedy for the existing difficulties. Electrification, it is thought, would give practically the same relief as double tracking and in as short a time as if the latter remedy were chosen, and electrification offers additional advantages of improved working conditions and reduced operating costs. By providing for an industrial load at the power station, the administration, or the electricity authority, when appointed, will be able to supply current along the route of the railway for municipal and industrial purposes. The site of the power station has not yet been definitely determined.

Sir William Hoy, general manager of railways and harbors, thinks that the section from Glencoe Junction to Tendega and from Durban to Pietermaritzburg should also be electrified. These sections would entail heavy expenditure in the near future on track improvements if electrification is not adopted. Sir William states also that the electrification will open up great possibilities for by-product production at the power stations from waste coal. The best grade of coal now used for locomotive purposes will, with electrification, be available for shipment, and the coal now regarded as waste will be used for the power stations.

### Sleeping Car Service in Europe

Before the war there was but one big international sleeping car line in continental Europe, a Belgian company known as the Compagnie Internationale des Wagons-Lits, according to the Railway Gazette (London). This company was organized in 1872 and owned and operated sleeping cars throughout Europe until the time of the war. There was of late years no competition anywhere except in Prussia and that only within the boundaries of the state. Wagons-Lits was always very progressive in the adoption of new devices for the safety and comfort of passengers.

When the war broke out many of the company's cars were confiscated and, of course, service was badly disrupted. After the war a competitor appeared in the field, a German company subsidized by the government and known as the Mitteleuropäische Schlaf- und Speisewagen Gesellschaft. This name was abbreviated to "Mitropa." Prior to the end of the war this company operated with equipment confiscated from the Wagons-Lits company.

Lately, however, the German company has been forced to return much of this equipment and it now operates only locally in Germany and into the Netherlands. Furthermore

Germany is being forced to allow the Wagons-Lits company to operate through services across its territories. The Wagons-Lits service, however, has not yet been restored in full.

Meantime the Mitropa company has been trying to get into the international business, but it is pointed out that its chances are not particularly good, inasmuch as the Wagons-Lits company already has long term contracts in most places and furthermore that, to do business on a large scale, Mitropa would have to build cars at present high prices whereas the Wagons-Lits cars were built under pre-war conditions.

#### Mexican Government Proposes to

##### Rehabilitate the National Tehuantepec

In an effort to revive the freight traffic over the National Tehuantepec Railroad the Mexican government will make extensive improvements to the ports of Salina Cruz and Puerto Mexico, the respective Pacific and Atlantic terminus of the trans-isthmian line. The contract for the first of these improvements at Salina Cruz has already been let, an initial appropriation of \$250,000 having been made by the government for the construction of warehouses and wharves. The channel also is to be dredged and the old loading equipment is to be replaced by modern devices, including electric cranes and carriers, it is stated. Similar improvements will be made at Puerto Mexico, which was formerly called Coatzacoalcos. During the latter years of the administration of the late President Porfirio Diaz the government spent several million dollars in the construction of breakwaters and other harbor and port works both at Salina Cruz and at Puerto Mexico. At Salina Cruz a large dry dock also was installed. This dry dock has been in practically an abandoned condition for several years. It is to be rehabilitated and brought into use.

Before the construction of the Panama Canal the National Tehuantepec Railroad handled heavy traffic and its facilities were so taxed at times that there was serious thought on the part of the Mexican government of double-tracking the line between the two terminals, 180 miles. In those days among the freight handled each year was approximately 500,000 tons of raw sugar from the Hawaiian Islands. With the diverting of practically all of the trans-isthmian traffic to the Panama Canal the National Tehuantepec fell into hard times. Then came the protracted revolutionary period which caused a suspension of what little coastwise traffic the road had been handling as well as a complete falling off of local shipments. For months at a time the road was out of commission. The rolling stock went from bad to worse. Just in the midst of these unfortunatous days a decree was issued by the late President Venustiano Carranza canceling the 51-year lease which S. Pearson & Son, Ltd., held from the government for operating the line. Lord Cowdrey and associates who compose this firm welcomed the action of Carranza, arbitrary as it was, as it relieved them of the burden of rehabilitating and attempting to operate a railway which offered little possibilities for the future.

It is the announced purpose of the Obregon administration to develop its deep-water ports to the greatest possible extent. Steps have been taken to enlarge the coastwise shipping service on both the Pacific and Gulf sides. It is even asserted by government authorities that the National Tehuantepec can be made to compete with the Panama Canal in the handling of certain kinds of products, and by a reduction of port charges and freight rates.

No trans-isthmian transportation project ever had a more troublesome history than that which finally resulted in the building of the National Tehuantepec Railroad. Spanning the Isthmus of Tehuantepec was the dream of engineers for more than a century. Many men of money and other claims to greatness were interested in the project from time to time. Many millions of dollars of American money were wasted in different enterprises that had for their object the connecting of the two oceans by some facility of quick and cheap transportation. At one time it was proposed to build a great ship railway. This was to consist of several parallel tracks across the isthmus. The ocean-going vessels when they arrived at the port would be hauled out of the water upon a large platform placed upon wheels and in this way it would be pulled across the 180 miles of land and dumped into the ocean on the other side. This project received the approval of many engineers of distinction. The Mexican government granted a concession for its fulfillment, but the promoters failed to finance it and it went by the board.

## Equipment and Supplies

### Locomotives

THE MINARETS & WESTERN will, within the next few months, send out inquiries for seven or eight locomotives.

THE MAGOR CAR CORPORATION, New York, has ordered one saddle tank locomotive from the Baldwin Locomotive Works.

THE ALABAMA & VICKSBURG has ordered one 10-wheel switching locomotive from the Baldwin Locomotive Works. This is in addition to the 3 locomotives ordered from the same builder reported in the *Railway Age* of April 8.

### Freight Cars

THE WABASH is inquiring for repairs to 700 box cars.

THE GREAT NORTHERN is inquiring for 300 steel log car bodies.

THE ST. LOUIS-SAN FRANCISCO will repair 1,800 or more freight cars in its own shops.

THE CHESAPEAKE & OHIO will receive bids until June 1 for 500 box cars of 40 tons' capacity.

THE ILLINOIS CENTRAL will soon send out inquiries, it is reported, for repairs to 4,000 coal cars.

THE CHICAGO, NORTH SHORE & MILWAUKEE has ordered 15 merchandise cars from the Cincinnati Car Company.

THE CANADA CREOSOTING COMPANY has ordered 120 standard tie cars from the Canadian Car & Foundry Company.

THE CUBAN-AMERICAN SUGAR COMPANY has ordered 50 cane cars of 15 tons' capacity from the Magor Car Company.

THE CHICAGO, ST. PAUL, MINNEAPOLIS & OMAHA has purchased 100 ballast cars from the Rodger Ballast Car Company.

THE PENNSYLVANIA SALT MANUFACTURING COMPANY, Philadelphia, Pa., is inquiring for 3 or 6 tank cars for transporting liquid chlorine.

THE PERE MARQUETTE, reported in the *Railway Age* of April 29 as being in the market for a number of cars, is inquiring for 500 box cars.

THE GOODWIN-GALLAGHER SAND & GRAVEL Co., New York, has ordered 6 hopper cars of 20 tons' capacity from the Magor Car Corporation.

THE CHICAGO & NORTH WESTERN, in addition to its recent car order, has purchased 20 box cars and 10 flat cars from the Western Steel Car & Foundry Company.

THE PACIFIC ELECTRIC is reported to have ordered 200 gondola dump cars, 40 ft. by 8 ft., 9 in., with steel underframes, from the National Safety Car & Equipment Company.

THE MISSOURI, KANSAS & TEXAS, which was noted in the *Railway Age* of April 15 as inquiring for 2,000 automobile cars, has issued an alternative inquiry for 1,500 box cars.

THE NORTHERN PACIFIC is inquiring for 250 gondola cars of 50 tons' capacity. As reported in the *Railway Age* of May 6, this company will buy a total of 1,750 cars of various types.

THE BELT RAILWAY OF CHICAGO, noted in the *Railway Age* of May 6 as inquiring for 450 gondola cars, has under consideration the purchase of 125 second-hand gondolas instead.

THE FLORIDA EAST COAST, reported in the *Railway Age* of March 11 as inquiring for 10 caboose cars, has ordered this equipment from the Mt. Vernon Car Manufacturing Company.

THE BANGOR & AROOSTOOK is rebuilding 250 freight cars in its shops at Derby, Me., which work was authorized last year, and is contemplating the rebuilding of 250 more. The company has recently purchased two Russel snow-plows.



THE ATCHISON, TOPEKA & SANTA FE is asking for bids on 2,000 steel underframe double-sheathed box cars of 40 tons' capacity and is also asking for alternate bids on 2,000 steel underframe double sheathed box cars of 40 tons' capacity, similar to the U. S. R. A. design.

THE CHESAPEAKE & OHIO reported in the *Railway Age* of April 22 as inquiring for 1,500 hopper bottom gondola cars and 1,500 flat bottom gondola cars, has ordered 1,500 hopper cars from the Newport News Shipbuilding & Dry Dock Co., and 1,500 gondola cars from the Pullman Company.

THE SOUTHERN RAILWAY, reported in the *Railway Age* of April 22 as inquiring for 2,000 plain box cars of 40 tons' capacity, has divided an order for 5390 box cars as follows: American Car & Foundry Company, 3,000, with an option on 1,000 cars additional; Mt. Vernon Car Manufacturing Company, 1,390; and Standard Steel Car Company, 1,000.

## Passenger Cars

THE WESTERN OHIO has purchased ten 45-ft. combination passenger and baggage cars from the J. G. Brill Company.

THE SOUTHERN RAILWAY, reported in the *Railway Age* of April 22 as inquiring for 60 cars for passenger service, has ordered 75 cars from the Pullman Company and 25 cars from the American Car & Foundry Company.

## Iron and Steel

THE PERE MARQUETTE, noted in the *Railway Age* of April 29 as inquiring for 3,500 tons of steel rails, has ordered this from the Inland Steel Company.

THE LONG ISLAND, reported in the *Railway Age* of April 15 as asking for bids on 2,500 tons of rail, has ordered from the Bethlehem Steel Company 2,500 tons of 100-lb. Pennsylvania Railroad standard sections.

THE NEW YORK CENTRAL, reported in the *Railway Age* of April 8 as asking for bids on 32,000 tons of rail, has placed orders for 24,800 tons with options on 7,200 tons additional as follows: Inland Steel Company, 2,000 tons, and Illinois Steel Company, 5,400 tons of 105-lb. sections for the New York Central, Lines West, with an option on 2,000 tons additional from the Illinois Steel Company if taken on or before July 1; Cambria Steel Company, 3,000 tons of 80-lb. sections for the Cincinnati Northern; Carnegie Steel Company, 3,000 tons of 105-lb. sections for the Cleveland, Cincinnati, Chicago & St. Louis; Bethlehem Steel Company, 1,300 tons of 105-lb. sections for the New York Central, Lines East, and to another company, 9,500 tons of 105-lb. sections for the New York Central, Lines East, with an option of 5,200 additional tons to be taken on or before July 1; also to the same company, 600 tons of 90-lb. sections for the Rutland Railroad.

## Machinery and Tools

THE BANGOR & AROOSTOOK will install a considerable amount of new machinery in its shops at Derby, Me.

THE CUBA RAILROAD is inquiring for a number of machine tools for its new shops at Camaguey, Cuba.

THE CHICAGO, BURLINGTON & QUINCY is inquiring for 17 lathes of various types, 11 crank shapers, 8 drills of various types, 4 boring mills, a wheel press, 2 bolt threaders, a pipe threading machine 3 shears, 3 punches, 2 combination punches and shears, 5 bending rolls, 15 grinders of various types, 5 hack saws, and a plate bending machine.

THE WESTERN MARYLAND, reported in the *Railway Age* of May 6 as inquiring for a number of machine tools, is asking for the following machines: A punch and shear; rod boring machine; 14-in., 26-in., 36-in., and 48-in. lathes; 6-in. pipe threading machine; 2-in. bolt cutting machine; 20-in. and 28-in. vertical drilling machines; 5-ft. radial drill; 52-in. and 62-in. boring and turning mills; 36-in. and 42-in. planers; driving wheel lathes; 6-in. power hack saw; 300-ton wheel press; 20-in. slotter; 5-spindle centering machine; also a bushing press.

## Supply Trade News

The Lundie Engineering Corporation has moved its Chicago office from 30 North LaSalle street, to 166 West Jackson boulevard.

Frank B. Stone has removed his office from the Railway Exchange building, to 1620 Mallers' building, 5 South Wabash avenue, Chicago.

W. B. Mallette has been appointed agent of the Track Specialties Company, New York, with office at 3883 Wyoming street, St. Louis, Mo.

The Austin Company, Cleveland, Ohio, has been given a contract to put up a one-story building, 120 ft. by 400 ft. at Hammond, Ind., for the Standard Steel Car Company.

W. T. Tyler, whose selection as director, vice-president and general manager of the National Safety Appliance Company, San Francisco, with temporary headquarters in the



W. T. Tyler

Peoples Gas building, Chicago, was announced in the *Railway Age* of May 6 (page 1089), was born in Janesville, Wis., on July 29, 1870. He entered railway service in June, 1883, as a messenger on the Wisconsin Central and was later an operator and dispatcher on the same road. In 1889 he was employed as a brakeman on the Milwaukee, Lake Shore & Western, now a part of the Chicago & North Western. From that time until 1891 he was a brakeman and conductor on the Northern Pacific, and from 1891

to 1900 he was consecutively, yardmaster, trainmaster and a superintendent of the Great Northern. He was appointed a superintendent of the St. Louis, Iron Mountain & Southern in 1900, and was promoted to general superintendent the following year. He was later successively general superintendent and general manager of the St. Louis-San Francisco. In 1915 he became a superintendent of the Northern Pacific, with headquarters at Pasco, Wash., and on February 1, 1917, was appointed general manager of the St. Louis-Southwestern. On May 15, 1917, he was elected first vice-president of this road, and on November 1, 1917, he resigned to become assistant to the vice-president in charge of operation of the Northern Pacific. On January 22, 1918, Mr. Tyler was appointed assistant to the director of the Division of Operation, with headquarters at Washington, D. C., and he was appointed senior assistant director on July 1, 1918. He was appointed director of the division of operation on January 15, 1919, in which capacity he served until March 1, 1920, when he became vice-president in charge of operation of the Northern Pacific. He later resigned and, as mentioned above, has now entered the railway supply field.

The Metal & Thermit Corporation, New York, has removed its Pittsburgh branch office from 1427 Western avenue to 801-807 Hillsboro street, Corliss Station, Pittsburgh, Pa.

W. H. Saunders, district sales representative of the National Cast Iron Pipe Company, with headquarters at Dallas, Tex., has been transferred to Kansas City, Mo. He will be succeeded at Dallas by B. L. Hendershot.

The War Finance Corporation has announced that the advance of \$5,000,000 to the Baldwin Locomotive Works, made

on January 15, 1920, for the purpose of financing the exportation of locomotives, has been repaid in full eight and one-half months in advance of the date of maturity.

**Dwight P. Robinson & Co.**, New York, has been given a contract for the construction of a building to accommodate American commercial exhibits at the Brazilian Centennial Exposition to be held in Rio de Janeiro beginning September 7. The building, which will be the unofficial exhibit building, will be constructed of American materials as far as possible. It will be purely a commercial proposition, having no direct connection with the exhibition plans of the American government under the appropriation of \$1,000,000 made by Congress recently.

The **Paige & Jones Chemical Company**, New York, manufacturers of materials for treating boiler feed water, has opened a general sales office at 417 South Dearborn street, Chicago. **Lucius A. Fritz**, until recently vice-president and general sales manager of the Borromite Company, who is a practical chemist and has had an extended experience with various phases of feed water treatment, has become associated with the Paige & Jones Chemical Company as vice-president and general sales manager, with headquarters at Chicago, and **Robert O. Friend**, formerly water and mechanical engineer of the Borromite Company, who is experienced in designing and building water softening plants, has been appointed vice-president and supervising engineer with headquarters at Hammond, Ind., of the Paige & Jones Chemical Company. The other officers of the company are: **Fred O. Paige**, president; **Charles P. Wolfe**, vice-president and treasurer, both at New York; **Fred O. Paige, Jr.**, secretary and works manager, Hammond, Ind. The executive offices of the company are at 248 Fulton street, New York and the technical department works are at Hammond. **C. B. Flint** will continue as sales manager of the railroad department, with headquarters at New York.

#### "No Pullman Merger," Carry Says

**E. F. Carry**, president of the Pullman Company, has declared that there is no foundation for various rumors connecting the Pullman Company with mergers with other concerns. "There has been no official talk or thought of buying any concern excepting our purchase of Haskell & Barker," he said. "With regard to the reported plan to segregate the operating and building functions of the company through separate organizations, I am told that such a suggestion has been made to the Pullman board of directors at least once annually for the past 10 or 12 years, and at intervals the directors have discussed it to some extent, but with no result. This year is no exception, and the matter will again be duly discussed, but whether anything will be done about it remains to be seen."



P. & A. Photo

Express Train Plunges Into a Swollen River in Vermont

## Railway Construction

**ATCHISON, TOPEKA & SANTA FE.**—This company has awarded a contract to **Joseph E. Nelson & Sons**, Chicago, for additions to its machine shop at Topeka, Kan., to cost approximately \$60,000, and has closed bids for the construction of bunkhouses at Galesburg, Ill., Shopton, Iowa, Lexington Junction, Mo., Ottawa Junction, Strong City and Cherryvale, Kan., and Newkirk, Okla., which work will cost approximately \$50,000.

**BANGOR & AROOSTOOK.**—This company's 1922 budget includes the ballasting of 65 miles of road, the contract for which has been let to the **Eyre-Johnson Company**, Philadelphia; the relaying of 24 miles of track with 80 and 90-lb. rails; installing 200,000 new ties, 80,000 tie plates and 14,000 rail anchors; relaying a number of side-tracks with heavier steel; replacing 140 wooden culverts with cast-iron or concrete; the painting of seventeen stations and fifteen steel bridges, including the large international bridge between Van Buren, Me., and St. Leonards, N. B.; extensive repairs to wire fences; the rebuilding of the engine house at Caribou, Me., probably with reinforced concrete, and the installation of a larger turntable; the construction of a new station, engine house and coaling plant at Squa Pan, Me.; repairing wharves at the company's tide-water terminal at Stockton Harbor; and extensive improvements to buildings at Derby, Me.

**CHICAGO & NORTH WESTERN.**—This company contemplates rebuilding in the near future its 12-stall engine house at Ashland, Wis., destroyed by fire on May 4.

**CHICAGO ROCK ISLAND & PACIFIC.**—This company will soon call for bids for the construction of a reinforced concrete undercrossing in connection with the separation of grades at Nora Springs, Iowa. This company and the New York Central have each ordered approximately 370 tons of steel from the King Bridge Company, Cleveland, Ohio, for the renewal of track elevation bridges between Eighteenth and Sixtieth streets, Chicago. The Rock Island will soon order an equivalent amount of steel for like purposes for installation between Sixtieth and Seventy-second streets in that city.

**CISCO & NORTHEASTERN.**—This company has awarded a contract to **J. H. Latson**, Cisco, Tex., for the construction of a 40-ft. by 200-ft. brick locomotive repair shop in that city, to cost \$12,500.

**ILLINOIS CENTRAL.**—This company has awarded a contract to the **Water & Coal Handling Company**, Chicago, for the construction of a 75-ton coaling station at Levy yard, New Orleans, La.

**NORTHERN PACIFIC.**—This company has closed bids for the construction of a \$180,000 double track bridge over the Yellowstone river at Huntley, Mont., to replace its single track structure at that point. It has also awarded a contract for the construction of a passenger station and office at Glendive, Mont., to cost \$200,000, and has authorized the construction of a tunnel and other work on its Phileman line change to cost approximately \$107,000, as well as the construction of a second main track at Duluth, Minn., to cost approximately \$38,000. Authority has also been given for the building of settling basins and other water supply facilities at Zero, Mont., to cost approximately \$16,000.

**NORTHERN PACIFIC TERMINAL Co.**—This company, pursuant to admitting the Great Northern and the Spokane, Portland & Seattle as tenants to the union station at Portland, is increasing the track layout in the station and for this and other reasons is now undertaking the construction of a new yard upon property recently acquired 2 or 3 miles from Portland. In connection with this work, a petition has been filed with the city of Portland for extensive street vacations required to provide for increased trackage within the city limits.

**OREGON SHORT LINE.**—The Interstate Commerce Commission has issued a certificate authorizing the construction of an extension of the Homedale branch from its present terminus at Homedale, Idaho, in a southeasterly direction, a distance of 7½ miles.

**PACIFIC FRUIT EXPRESS.**—This company is accepting bids for the construction of an artificial icing plant on the Southern Pacific at Bakersfield, Calif., to cost approximately \$400,000.



## Railway Financial News

**ATLANTA, BIRMINGHAM & ATLANTIC.—State Ownership Favored.**—A meeting is to be held on May 16 at Moultrie, Ga., in behalf of saving this railroad from being junked. Mayor Key, of Atlanta, who is president of the association for state ownership of the road, will preside. The Atlanta Chamber of Commerce has indorsed the movement to prevent the junking of the Atlanta, Birmingham & Atlantic.

**BANGOR & AROOSTOOK.—Annual Report.**—The corporate income account for the year ended December 31, 1921, compares as follows:

	1921	1920
Operating revenues	\$7,353,938	\$5,786,756
Operating expenses	5,756,464	5,030,406
Net from railway operations	1,597,474	756,350
Railway tax accruals	422,709	286,561
Railway operating income	1,173,211	469,789
Total non-operating income	243,684	1,077,828
Gross income	1,416,895	1,547,617
Interest on funded debt	1,018,965	984,877
Total deductions from gross income	1,037,632	997,251
Net income	379,264	550,367

The operating revenues and expenses in detail and the principal traffic statistics for the year 1921 compares as follows:

	1921	1920
Operating revenues:		
Freight	\$6,127,457	\$5,240,928
Passenger	956,320	1,117,246
Total including other	\$7,348,709	\$6,675,481
Operating expenses:		
Maintenance of way and structures	\$1,192,469	\$1,445,082
Maintenance of equipment	1,768,400	1,585,035
Traffic	52,814	46,782
Transportation	2,538,523	2,649,211
General	235,621	241,921
Total, including other	\$5,838,452	\$6,063,076
Net railway operating revenue	\$1,510,257	\$612,404
Railway tax accruals	412,679	334,670
Railway operating income	1,095,782	227,645
Passenger traffic:		
Number of passengers carried earning revenue	532,451	684,644
Number of passengers carried one mile	20,866,348	27,345,129
Average distance carried, miles	39.19	39.94
Average receipts per passenger per mile	\$0.0458	\$0.0409
Freight traffic:		
Number revenue tons carried	2,136,483	2,154,229
Number of tons carried one mile	232,548,773	242,823,083
Average distance haul of one ton, miles	108.85	113.23
Average receipts per ton per mile	\$0.0264	\$0.0216

**CENTRAL OF NEW JERSEY.—Asks Authority for Equipment Trust Bonds.**—This company has applied to the Interstate Commerce Commission for authority to issue \$2,000,000, 6 per cent equipment trust bonds under an equipment lease with the Hudson Trust Company to be held in the treasury.

**CHESAPEAKE & OHIO.—Authorized to Assume Liability.**—The Interstate Commerce Commission has authorized this company to assume obligation and liability in respect of \$7,635,000 of equipment trust certificates by entering into a lease and equipment trust agreement with the Commercial Trust Company of Philadelphia.

**CHICAGO & NORTH WESTERN.—Annual Report.**—The income account for the year ended December 31, 1921, compares as follows:

	1921	*1920
Operating revenue:		
Freight	\$95,687,013	\$94,570,196
Passenger	33,770,082	32,126,380
Total, including other	144,775,476	140,755,628
Operating expenses	129,091,428	130,252,212
Net from railway operations	15,684,048	10,503,416
Railway tax accruals	8,464,087	7,557,889
Railway operating income	7,201,883	2,917,251
Equipment and joint facility rents—net debit	550,746	2,217,599
Net railway operating income	6,651,137	699,652
Total non-operating income	3,935,387	123,111,911
Gross income	10,586,524	23,811,563
Interest on funded debt	11,218,008	10,440,294
Total deductions	11,831,957	11,352,309
Net income	Def. 1,245,433	12,459,254

Dividends:		
7 per cent on preferred stock	1,567,650	1,567,650
5 per cent on common stock	7,257,625	7,257,625
Balance income for the year	Def. 10,070,708	3,633,979

\*March 1 to Dec. 31.

†Includes compensation and U. S. Govt. guaranty.

**CHICAGO, MILWAUKEE & ST. PAUL.—Annual Report.**—This company's annual report for 1921 is reviewed in an article on another page of this issue entitled "C. M. & St. P. Deficit After Charges \$11,070,609." See also excerpts from annual report on adjacent pages.

**CHICAGO, ST. PAUL, MINNEAPOLIS & OMAHA.—Annual Report.**—The income account for the year ended December 31, 1921, compares as follows:

	1921	*1920
Operating revenues:		
Freight	\$19,285,657	\$17,360,124
Passenger	6,865,280	7,047,837
Total, including other	28,137,408	26,489,817
Operating expenses	24,392,314	23,767,081
Net from railway operations	3,745,093	2,722,736
Railway tax accruals	1,265,198	1,461,938
Railway operating income	2,461,188	1,252,513
Net railway operating income	2,065,349	1,290,231
Total non-operating income	308,629	13,785,649
Gross income	2,373,978	5,075,879
Interest on funded debt	2,478,531	2,405,763
Total deductions	2,659,656	2,488,209
Net income	Def. 285,677	2,587,670
Dividends:		
Preferred stock, 7 per cent	788,151	788,151
Common stock, 5 per cent	927,835	927,835
Balance income for the year	Def. 2,001,663	871,684

\*March 1-Dec. 31.

†Includes compensation and guaranty from U. S. Govt.

**DELAWARE & HUDSON.—Annual Report.**—This company's annual report for 1921 is reviewed in an article on another page of this issue entitled "Delaware & Hudson Earns 11.62 Per Cent on Stock." See also excerpts from annual report on adjacent pages.

**EL DORADO & SANTA FE.—Asks Authority to Issue Stock.**—This company has applied to the Interstate Commerce Commission for authority to issue \$50,000 of capital stock.

**GEORGIA NORTHERN.—Six Months' Guaranty Certified.**—The Interstate Commerce Commission has certified the amount of this company's guaranty in 1920 as \$7,132, of which \$1,632 was still to be paid.

**HAWKINSVILLE & FLORIDA SOUTHERN.—Seek to Halt Sale.**—Charging that the entire proceeding, which resulted in an order from the court for the sale of the Hawkinsville & Florida Southern, was an act of collusion between the officials of that road and the Georgia Southern & Florida, the Union Savings Bank & Trust Company, of Macon, Ga., bondholders, has petitioned for an injunction restraining the sale of the road set for May 9. Judge J. A. Matthews has signed an order calling on the representatives of the two railroads to show cause why the petition should not be granted, an injunction issued and a new receiver appointed.

**ILLINOIS CENTRAL.—Asks Authority to Issue Stock.**—This company has applied to the Interstate Commerce Commission for authority to issue \$10,929,600 of its preferred stock in accordance with its intention, as previously announced, to provide funds for electrification and enlargement of its terminal facilities at Chicago.

**KANSAS CITY SOUTHERN.—New Directors.**—Moritz Rosenthal, Macon B. Staring and Pierpont V. Davis, all of New York, have been elected directors to succeed B. S. Guinness, John F. Harris and W. H. Williams. The resignations of Mr. Harris and Mr. Williams resulted from the decision ruling of the Interstate Commerce Commission regarding interlocking directorates.

**LEHIGH & HUDSON RIVER.—Annual Report.**—The income account for the year 1921 compares with the previous year as follows:

	1921	*1920
Railway operating revenue	\$3,242,291	\$2,780,302
Railway operating expenses	2,429,843	2,378,244
Net from railway operation	812,448	402,058
Gross income	676,876	646,574
Total deductions from gross income	339,920	291,101
Net income transferred to profit and loss	336,956	355,473
Dividend appropriations	395,306	103,170
Profit and loss, December 31st, credit	2,044,006	2,107,314

\*March 1 to Dec. 31.

(Continued on page 1152)

# Annual Report

## Fifty-Seventh Annual Report of the Chicago, Milwaukee & St. Paul Railway Company

The Directors submit to the Stockholders the following report of the operations of the Company for the year ended December 31, 1921.

### INCOME ACCOUNT.

<b>RAILWAY OPERATING INCOME:</b>	
Railway operating revenues.....	\$146,765,766.04
Railway operating expenses.....	127,957,001.87
Net railway operating revenue.....	\$18,808,764.17
Railway tax accruals.....	8,762,089.33
Uncollectible railway revenues.....	283,545.53
Railway operating income.....	\$9,763,129.31
<b>NON OPERATING INCOME:</b>	
Rents received—Equipment.....	\$218,995.34
Rents received—Other.....	711,481.44
Income from lease of road.....	300,574.54
Dividends on stocks.....	74,496.83
Interest on bonds.....	48,790.17
Interest on other securities and accounts.....	225,624.38
Amount accrued under guarantee provision Section 209, Transportation Act 1920.....	2,277,796.51
Miscellaneous income.....	514,098.77
	\$4,371,857.98
Gross income.....	\$14,134,987.29
<b>DEDUCTIONS:</b>	
Interest on funded debt.....	\$18,767,680.70
Interest on unfunded debt.....	180,424.29
Rents paid—Equipment.....	3,485,115.38
Rents paid—Lease of road.....	459,593.53
Rents paid—Other.....	1,751,880.86
Miscellaneous.....	560,901.19
	25,205,595.95
Net deficit.....	\$11,070,608.66

### ACQUISITION OF CONTROL OF THE CHICAGO, MILWAUKEE & GARY RAILWAY COMPANY.

January 1, 1922, your Company acquired the control of the Chicago, Milwaukee & Gary Railway Company, a corporation of the State of Illinois. This control was acquired pursuant to the terms and provisions of an agreement dated December 31, 1921, between your Company and the St. Louis Union Trust Company, the owner and holder of all of the securities of the Chicago, Milwaukee & Gary Railway Company, consisting of the capital stock of that company, of the par value of \$1,000,000, and of First Mortgage Five Percent Forty Year Gold Bonds of that Company of the par value of \$5,700,000. By the terms of that Agreement, the St. Louis Union Trust Company has delivered to your Company all of said capital stock and \$2,700,000 of said bonds, in consideration of your Company guaranteeing the payment of the principal of \$3,000,000 of said bonds and the interest thereon accruing after January 1st, 1924. The principal of these bonds does not mature until April 1st, 1948. The Interstate Commerce Commission, pursuant to the provisions of the Transportation Act, 1920, has approved and authorized such control on the terms and conditions of the Agreement of December 31st, 1921.

The railway of the Chicago, Milwaukee & Gary Railway Company comprises 96.83 miles of main track and 9.74 miles of branch lines, which connects with the railway of the Terre Haute Division of your Company at Delmar, Illinois, with the railway of the Illinois Division of your Company at Kirkland, Illinois, and with the railway of the Racine & Southwestern Division of your Company at Rockford, Illinois. It has direct connections at Delmar and Momence, Illinois, with the New York Central and Chicago & Eastern Illinois lines, and forms an outer belt line around Chicago.

The control of the Chicago, Milwaukee & Gary Railway Company by your Company, enables it to transport Company and commercial coal originating on the Terre Haute Division, as well as on the lines of the Chicago & Eastern Illinois Railway Company, direct to points on its lines west and north, without hauling the same through the expensive terminals of Chicago, and with shorter haulage. This not only expedites movement, but greatly reduces the cost of transportation.

### ACQUISITION BY LEASE OF THE CHICAGO, TERRE HAUTE & SOUTHEASTERN RAILWAY

The Stockholders having given their approval of the transaction at the last annual meeting on May 12th, 1921, the lease of the railway property and franchises of the Chicago, Terre Haute and Southeastern Ry. Co. to the Chicago, Milwaukee & St. Paul Ry. Co. for a term of nine hundred and ninety-nine years became effective on July 1st, 1921.

These leased lines extend from Chicago Heights, Illinois, a point about twenty-seven miles south of Chicago, to Westport, Indiana, and consist of 361.41 miles of main track, 7.64 miles of second main track, 5.44 miles of connection tracks, and 196.41 miles of yard tracks, sidings and spur tracks, a total of 570.90 miles of track.

Under this lease valuable trackage rights are acquired over about 48 miles of other railway lines, of which about 35 miles has second main track, making direct connections with the lines of this company near Franklin Park, Illinois, on the Illinois Division.

The revenues and expenses of the lines mentioned above have been included since July 1st, 1921, with the revenues and expenses of this company's lines.

### ADDITIONS AND BETTERMENTS.

#### EQUIPMENT:

Authority has been given for the purchase of 2500, fifty ton, steel under-frame gondola cars, 1500 to be purchased from the Haskell & Barker Company and 1000 from the Bettendorf Company. Authority was also granted for the conversion of 12 Class A-1 compound locomotives to simple type, of which 8 were completed during the year, the remainder will be completed early in 1922.

#### BRIDGES:

Reconstruction of Bridges FF-1014 over the Ebey Slough and FF-1018 over the Snohomish River, near Everett, Washington, on the Coast Division, was practically completed during the year. Both structures span navigable waterways and include movable spans to permit the passage of waterway traffic.

#### WATER STATIONS:

The following water treating plants, referred to in last year's report as being under construction were completed and placed in operation during the year: Iowa and Dakota Division—Sanborn, Iowa, Lennox, Marion Junction, and Bridgewater, S. D. Sioux City and Dakota Division—Ethan, Avon, Tyndall and Platte, S. D. A water treating plant at Scotland, S. D., on the Sioux City and Dakota Division, was constructed during the year and placed in service in January, 1922.

The new water station at Tyndall and the work necessary to increase the quantity and improve the quality of the present supplies at Yankton and Platte, S. D., on the Sioux City and Dakota Division, and at Plankinton, S. D., on the Iowa and Dakota Division, commenced in 1920, was completed before the close of the year 1921. Similar work at Lennox, S. D., on the Iowa and Dakota Division, mentioned in last year's report, has been temporarily deferred, but its completion is expected in 1922. During the year work was commenced at Sanborn, Iowa, for new water station facilities to increase the quantity over that obtained with the present facilities.

#### BALLAST:

On the Trans-Missouri Division Branch Line, Trail City to Faith, S. D., approximately 25,000 yards of cinders were placed on parts of 20 miles of line not previously ballasted.

#### INTERLOCKING PLANTS:

An interlocking plant was constructed and placed in operation at University Place, Evanston, Illinois. This plant controls the movement of Chicago, North Shore & Milwaukee R. R. trains to and from that company's Church Street Station.

#### GRADE SEPARATION:

The elevation of tracks on the Evanston Line of the Chicago Terminal Division between Montrose Avenue and Howard Street, a distance of 4.4 miles, was continued. At the end of the year approximately 90% of the work was completed, 5% having been done during the year.

The new stations at Loyola and Morse Avenues and Howard Street, on which work was started in 1920 were completed and placed in operation. Approximately 80,000 cubic yards of filling was placed, completing the filling for the third and fourth tracks.

The work remaining to be done consists of the completion of unfinished bridge floors, the laying of the fourth main track and the construction of six permanent stations located at Argyle Street, and Berwyn, Bryn Mawr, Thorndale, Granville and Jarvis Avenues.

### CHICAGO, TERRE HAUTE & SOUTHEASTERN RAILWAY.

#### ADDITIONAL TRACKS:

Trackage of 9,097 lineal feet to serve the J. W. Hamilton and the Baker Mines was constructed at Hawton, Indiana, completing a system of tracks at these mines—9,602 lineal feet having been laid prior to July 1, 1921.

Construction of an additional loading track, 811 feet long and of 2,466 feet of storage tracks serving the Talleydale Mine at Clovelly, and the Fayette, Talleydale and Bardyke Mines at Bridge Junction, Indiana, respectively, was commenced and has been completed since the close of the year.

Crossovers were constructed at Posen and Blue Island, Illinois, providing permanent connections with the Indiana Harbor Belt R. R. at Posen and the Baltimore and Ohio Chicago Terminal Railroad, at Blue Island, to accommodate freight service between Faithorn and Bensenville, Illinois.

Construction of an additional passing track, 2353 ft. long at Belt Junction, Indiana, to expedite train movement, was commenced and since the close of the year the work has been completed.

#### TURNABLES:

Work was commenced on the replacement of a 62-ft. steel turntable at Terre Haute, Indiana, with a 70-ft. steel turntable and incidental changes, including rearrangement of tracks and turnouts. The work has been completed since the close of the year.

### GUARANTY PERIOD.

As stated in report for last year, the Company filed with the Interstate Commerce Commission a statement of its operations during the guaranty period under the provisions of the Transportation Act, 1920. In addition to the amount of \$14,297,702.00 reported received in last year's report, further advances were made during the year 1921, amounting to \$8,137,190.05, which were used in payment of interest on funded debt and other miscellaneous current obligations.

A claim is pending before the Interstate Commerce Commission for the balance of the amount due under the guaranty.

### FEDERAL VALUATION.

Satisfactory progress was made on the Federal Valuation of the Company's property during the year. All field work was completed. All maps were completed and delivered to the Bureau of Valuation and final certificate of completion was filed. Joint work was continued with the Bureau of Valuation on the final collection and adjustment of quantities. Final collections are 20% completed and the Bureau is now applying prices to the inventory. Considerable progress has been made in the development of original costs and reproduction prices to be used in the application of prices to the inventory. During the latter part of the year the District offices of the Bureau of Valuation were consolidated at Washington, D. C., thereby somewhat delaying the progress of the work, and it is now probable that the Tentative Valuation will not be served upon the Company until some time during the year 1923.

### MILES OF TRACK, DECEMBER 31, 1921.

Owned solely by this Company:	
Main track.....	10,159.53
Second main track.....	1,050.12
Third main track.....	22.30
Fourth main track.....	15.47
Connection tracks.....	42.64
Yard tracks, sidings and spur tracks.....	3,372.69
	14,662.75
Owned jointly with other Companies:	
Main track.....	109.32
Second main track.....	6.10
Third main track.....	1.95
Fourth main track.....	1.90
Connection tracks.....	8.03
Yard tracks, sidings and spur tracks.....	214.25
	341.55
Used by this Company under contracts:	
Main track.....	407.16
Second main track.....	123.34
Third main track.....	1.14
	531.64
Used by this Company under lease:	
Main track.....	361.41
Second main track.....	7.64
Connection tracks.....	5.44
Yard tracks, sidings and spur tracks.....	196.41
	570.90
Total miles of track.....	16,106.84



Average miles of main track in operation during the year:	
Owned solely .....	10,152.16 miles
Owned jointly .....	108.95 "
Used under contracts and under lease .....	547.52 "

Total average miles operated..... 10,808.63 miles

The lines of road of this Company owned solely and jointly are located in the following States:	
Wisconsin .....	1,793.12 miles
Illinois .....	418.75 "
Iowa .....	1,865.40 "
Minnesota .....	1,230.85 "
North Dakota .....	379.81 "
South Dakota .....	1,795.95 "
Missouri .....	140.25 "
Michigan .....	199.22 "
Montana .....	1,235.29 "
Idaho .....	230.67 "
Washington .....	979.54 "

Total main track owned solely and jointly..... 10,268.85 miles

## EQUIPMENT CHANGES.

During the year the remaining twenty-nine of the one hundred Mikado Steam Locomotives mentioned in the 1920 report as being constructed under contract were received. Equipment rebuilt during the year consisted of 44 steam locomotives, 150 coal cars, 2 express refrigerator cars and 1 Company service car. One locomotive was converted for use as a shop switching locomotive, 4 open top observation cars and 7 Company service cars were converted from other passenger and freight equipment and 28 freight train cars and one Company service car previously reported as taken out of service were reinstated, as follows:

73 Locomotives—steam	4 Ore cars
17 Box cars	2 Express refrigerator cars
151 Coal cars	4 Open top observation cars
4 Flat cars	9 Work train cars
2 Refrigerator cars	1 Company service locomotive

During the year 46 steam locomotives and 1512 cars were destroyed by wreck or fire, sold or taken down on account of small capacity, converted or rebuilt, as follows:

46 Locomotives—steam	10 Ore cars
766 Box cars	3 Gas-electric motor cars
134 Flat cars	1 Sleeping car
132 Stock cars	2 Parlor cars
231 Coal cars	1 Observation car
91 Refrigerator cars	1 Passenger and baggage car
14 Caboose cars	104 Work train cars
22 Ballast cars	

## RESERVE FOR ACCRUED DEPRECIATION.

At the close of the fiscal year, ending December 31, 1920, there was at the credit of reserve for accrued depreciation the sum of \$17,863,662.62.

A certain percentage of the total cost of equipment has been credited to this reserve for the estimated depreciation of locomotives, passenger train cars, freight train cars and work equipment, accrued during the year, which, together with other adjustments, aggregates \$3,237,496.29.

There has been charged to this reserve an amount of \$373,411.97 representing the accrued depreciation, previously credited, on locomotives and cars destroyed, sold or taken down during the year, which results in a net increase in this reserve of \$2,864,084.32 for the year.

The balance of this reserve, December 31, 1921, as shown in the balance sheet is \$20,727,746.94, which represents the estimated depreciation of rolling stock from June 30, 1907, to December 31, 1921.

## EQUIPMENT, DECEMBER 31, 1921.

	C. M. & St. P. Ry. Co.	C. T. H. & S. E. Ry. Co.
Locomotives—steam .....	1,945	70
Locomotives—electric .....	62	..
Freight-Train Cars:		
Box cars .....	37,883	191
Flat cars .....	4,668	905
Stock cars .....	4,670	7
Coal cars .....	6,859	5,309
Refrigerator cars .....	1,696	24
Caboose cars .....	992	48
Other freight-train cars (ore cars) .....	1,913	..
Ballast cars .....	2,277	..
	60,958	6,484
Passenger-Train Cars:		
Coaches .....	635	64
Combination passenger cars .....		
Passenger, baggage and mail .....	4	..
Passenger and baggage .....	98	7
Gas-electric motor cars .....	4	..
Baggage-buffet .....	5	..
Buffet-observation .....	16	..
Buffet-lounging cars .....	2	..
Other Combination Cars .....		
Baggage, mail and express .....	4	..
Baggage and mail .....	83	4
Mail and express .....	51	..
Dining cars .....	56	..
Parlor cars .....	23	..
Sleeping cars—standard .....	201	..
Sleeping cars—tourist .....	36	..
Baggage and express cars .....	338	2
Postal cars .....	42	..
Opentop observation cars .....	4	..
	1,602	77
Company Service Cars:		
Officers' and pay cars .....	23	3
Derrick cars .....	52	1
Steam shovels .....	23	1
Wrecking cars .....	19	10
Other company service cars .....	2,650	133
	2,767	148

[ADVERTISEMENT]

Floating Equipment:	
Tug boats .....	1
Barges .....	8
Total .....	67,343

## INSURANCE FUND.

## INSURANCE RESERVE ACCOUNT

INCOME:	
Premium received:	
For Insurance of railway properties .....	\$390,976.63
Less—reinsurance paid .....	146,001.59
Net premium income .....	\$244,975.04
Other Income:	
Interest received on securities owned .....	\$92,991.96
Gross Income .....	\$337,967.00
DISBURSEMENTS:	
Fire losses—Net .....	\$337,967.00

## ASSETS AND LIABILITIES

ASSETS:	
Funded:	
Securities .....	\$3,296,748.77
LIABILITIES:	
Insurance Reserve .....	\$3,296,748.77

## CAPITAL STOCK.

At the close of the last fiscal year (December 31, 1920), the share capital of the Company amounted to \$233,686,200.00 and consisted of \$117,411,300.00 of Common Stock and \$116,274,900.00 of Preferred Stock, of which \$429,100.00 Preferred Stock and \$5,300.00 Common Stock are held by the Company.

Of the Preferred Stock held by the Company, \$343,000.00 is in the Treasury and \$86,100.00 is in the Insurance Reserve Fund.

All of the \$5,300.00 of Common Stock held by the Company is in the Insurance Reserve Fund.

No Capital Stock has been issued during the year ended December 31, 1921.

## FUNDED DEBT.

At the close of the last fiscal year the Funded Debt of the Company was \$529,562,654.66.

It has been decreased during this fiscal year by \$25,340,000.00 Chicago and Pacific Western Division 5% Bonds matured January 1st, 1921; by \$4,755,000.00 Wisconsin and Minnesota Division 5% Bonds matured July 1st, 1921; by \$1,360,000.00 Chicago and Lake Superior Division 5% Bonds matured July 1st, 1921; by \$2,192,600.00 6% Equipment Gold Notes matured January 15th, 1921, and January 15th, 1922, by \$15,000.00 Bellingham and Northern Railway 5% Bonds retired and \$557,981.96 European Loan 4% Bonds of 1910 retired.

It has been increased during this fiscal year by \$557,981.96 Four Per Cent Gold Bonds of 1925 issued in place of European Loan 4% Bonds of 1910 retired.

There have been issued during the year \$43,000,000.00 General Mortgage 5% Bonds maturing May 1st, 1929 in place of underlying bonds, which have been retired and cancelled during this and previous years, and these bonds have been used by the company for collateral purposes.

There have been issued during the year notes in favor of the United States Government bearing interest at 6% for \$25,340,000.00, maturing March 1st, 1922, and \$10,000,000.00 maturing January 1st, 1923. The first mentioned note will be extended by the Government at \$25,000,000.00 to mature March 1st, 1927.

The amount of Bonds and Notes at the close of this fiscal year is \$574,240,054.66, of which \$160,257,358.24 are in the treasury of the Company, and \$413,982,696.42 have been issued and are outstanding.

Mortgage Bonds of the Company known as the Wisconsin and Minnesota Division Bonds in the principal amount of \$4,755,000.00 and the Chicago and Lake Superior Division Bonds in the principal amount of \$1,360,000.00, matured July 1, 1921.

On account of the prevailing high rates of interest, it was not deemed advisable to issue, at this time, either General Mortgage Bonds or General and Refunding Mortgage Bonds of the Company for the purpose of meeting this maturity and other obligations.

Accordingly, an application was made to the Interstate Commerce Commission under the Transportation Act, 1920 for the loan of \$10,000,000.00.

The application was granted, and this amount was loaned to the Company on its note which matures January 1st, 1923, bearing interest at the rate of six per cent per annum. Substantially all of the bonds have been paid, and the remainder will be paid when presented.

## TREASURY BONDS.

At the close of the year ending December 31st, 1920, there were in the Treasury bonds to the amount of..... \$117,247,200.00

There have been added during the year, bonds as follows:	
General Mortgage 5% Bonds .....	43,000,000.00
Tacoma Eastern R. R. Co. 5% Bonds .....	10,000.00
Four per cent Gold Scrip of 1925 .....	158.24

Treasury Bonds December 31st, 1921..... \$160,257,358.24

## Composed of the following:

General and Refunding Mortgage bonds certified for the acquisition of additional property or additions and betterments and other lawful corporate purposes .....	\$73,495,200.00
General and Refunding Mortgage bonds certified by the Trustee against expenditures for additional properties or additions and betterments, and available for sale at any time: Pledged with the United States Government....	43,722,000.00

\$117,217,200.00

General Mortgage 5% Bonds	
Pledged with United States Government .....	43,000,000.00
Tacoma Eastern R. R. Co.	
First Mortgage 5% Bonds .....	40,000.00
Four per cent Gold Scrip of 1925 .....	158.24

Total .....

General balance sheet, income, profit and loss and other tables relating to corporate affairs and statements showing results of operation are appended hereto.

By order of the Board of Directors.

April, 1922.

H. E. BYRAM,  
President.

## Ninety-Second Annual Report of the Delaware &amp; Hudson Company

## GENERAL OFFICE

NEW YORK, N. Y., April 1, 1922.

To the Stockholders of The Delaware &amp; Hudson Company:

The following presents the income account of your company for the year 1921, arranged in accordance with the rules promulgated by the Interstate Commerce Commission, with comparative results for the year 1920:

	1921	1920	Increase or Decrease
Railway operating revenues...	\$45,776,859.41	\$45,354,298.72	\$422,560.69
Railway operating expenses...	38,825,529.11	42,126,330.19	-3,300,801.08
Net railway operating revenues	\$6,951,330.30	\$3,227,968.53	3,723,361.77
Operating income credits:			
Hire of freight cars—credit balance	\$915,595.24	Dr. \$75,555.60	995,150.84
Rent for locomotives	81,131.03	100,727.06	-19,596.03
Rent from passenger train cars	78,114.04	79,106.12	-992.08
Rent from work equipment	24,998.36	21,489.56	3,508.80
Joint facility rent income	167,055.68	136,502.10	30,553.58
Total credits	\$1,266,894.35	\$258,269.24	1,008,625.11
Gross railway operating income	\$8,218,224.65	\$3,486,237.77	4,731,986.88
Operating income debits:			
Railway tax accruals	\$993,973.96	\$1,186,053.92	-192,079.96
Uncollectible railway revenues	16,731.56	939.26	15,792.30
Rent for locomotives	26,065.95	18,447.13	7,618.82
Rent for passenger train cars	55,482.21	32,593.63	22,888.58
Rent for work equipment	2,364.71	1,578.44	786.27
Joint facility rents	364,489.49	428,058.56	-63,569.07
Total debits	\$1,459,107.88	\$1,667,670.94	-208,563.06
U. S. Govt. compensation guarantee		\$5,621,163.60	-5,621,163.60
Net railway operating income	\$6,759,116.77	\$7,439,730.43	-680,613.66
Non-operating income:			
Income from lease of road	\$88,124.39	\$88,933.13	-808.74
Miscellaneous rent income	49,410.47	85,197.78	-35,787.31
Miscellaneous non-operating physical property	12,148.98	23,467.84	-11,318.86
Dividend income	1,327,616.98	1,038,041.03	289,575.95
Income from funded securities	202,547.19	214,969.29	-12,422.01
Income from unfunded securities and accounts	108,888.85	143,876.71	-34,987.86
Income from sinking and other reserve funds	74,181.15	81,374.32	-7,193.17
Miscellaneous income	1,569,868.89	1,315,427.01	254,441.88
Total non-operating income	\$3,432,786.90	\$2,991,287.02	441,499.88
Gross income	\$10,191,903.67	\$10,431,017.45	-239,113.78
Deduction from gross income:			
Rent for leased roads	\$1,771,929.41	\$1,944,157.01	-172,227.60
Miscellaneous rents	1,716.00	1,821.25	-105.25
Interest on funded debt	3,284,579.63	3,228,948.12	55,631.51
Interest on unfunded debt	178,272.37	303,585.05	-125,312.68
Miscellaneous income charges	17,954.10	19,343.15	-1,389.05
Total deductions	\$5,254,451.51	\$5,497,854.58	-243,403.07
Net Income—The Delaware and Hudson Company carried to general profit and loss	\$4,937,452.16	\$4,933,162.87	4,289.29
Percentage to capital stock	11.62	11.61	.01

## FINANCIAL

The capital stock of The Delaware and Hudson Company on December 31, 1921, was \$42,503,000, there having been no change during the year.

The total funded debt on December 31, 1921, was \$67,894,600, a reduction

of \$201,400, as compared with December 31, 1920. First lien equipment bonds in the amount of \$5,000 were purchased through the sinking fund established in connection with their issue. The issue of six per cent gold notes under the equipment trust provided to pay for 1,500 freight cars allocated to your company by the United States Railroad Administration decreased \$196,000 by the payment of \$265,400 which matured on January 15, 1921, and the issue of 69,000 additional to complete the settlement in accordance with the contract. The total issue was \$3,981,000.

The sum of \$322,040, being one per cent of the par value of the first and refunding mortgage gold bonds outstanding on June 1, 1921, was paid during the year to the trustee under the first and refunding mortgage, making the total paid to December 31, 1921, \$4,058,270. The sum paid was expended in additions and betterments to the mortgaged property in accordance with the trust agreement.

There was accumulated in the Coal Department sinking fund during the year, in accordance with the ordinance passed on May 9, 1899, and amended on May 10, 1910, \$398,086.50, which has been used in the acquisition of coal lands and unmined coal in Pennsylvania.

The amount paid to the trustee under the first lien equipment trust indenture during the year was \$650,000. The total paid to date is \$9,100,000 which has been increased by accumulations of interest on balances and investments. Complying with the agreement, bonds issued thereunder having a value of \$3,976,000 have been purchased at a cost, including accrued interest, of \$3,930,445, and retired; \$4,439,126.55 has been expended for equipment which has been made subject to the indenture, and securities and cash to the amount of \$1,753,017.13 are now held by the trustee.

There was received during the year from the United States, on account of the guarantee of net earnings provided for by the Transportation Act of 1920, the guarantee period extending through August 31, 1920, the sum of \$515,000, which with the amounts received during the year 1920, aggregating \$2,195,000, makes a total of \$2,710,000. Nothing was received from the United States during the year for compensation for the taking over of the company's property in December, 1917, and its subsequent occupation and use until the close of business on February 29, 1920. The final settlements of both these accounts with the United States are still pending.

## COAL DEPARTMENT.

The anthracite produced by your affiliated corporations during the year 1921, including the product of washeries, aggregated 9,122,408 long tons, an increase of 1,033,226 tons, or 12.77 per cent above 1920. This output was 13.01 per cent of the year's total production of all Pennsylvania anthracite mines and washeries, estimated at 70,117,000 long tons, or 1.5 per cent below 1920.

The new Marvine breaker, located in Scranton, began late in 1920, was completed during the year. It is of steel construction, with the least practicable inflammable material, and equipped with the most modern machinery for the preparation of anthracite.

Several statutes adverse to the anthracite industry of the State were enacted by the Legislature of Pennsylvania during the year. A taxing statute, effective on July 1, 1921, established a new and special tax of one and one-half per cent on the value of all anthracite prepared for market. Both in substance and in form, this statute seems to be the equivalent of the "Rooney" act which was declared unconstitutional by the Supreme Court of Pennsylvania in 1915. Although there have been subsequent changes in the personnel of the Supreme Court, there has been no relevant change in the fundamental law of the Commonwealth. Upon the advice of counsel, a suit was brought to test the power of the Legislature to re-enact this form of taxation and the Dauphin County Court has sustained the enactment. Appeal to the Supreme Court of the State has been taken. Other enactments, known respectively as the "Kohler" and "Fowler" acts, impose penalties for mining operations that cause subsidences of surface resulting in injuries to persons or property, giving to municipal authorities extensive control over mining operations within the limits of their municipalities, and exempt from the punitive provisions all operators that, in terms, accept the legislation and thereby agree to pay two per cent of the value of all the coal they prepare for market to the State. The fund thus constituted to be first available to reimburse those damaged by mine caves, including both natural and artificial persons, and for the expenses of a commission charged with the enforcement of these laws and, second, for all public purposes. These acts became effective on August 27, 1921, and all but a few anthracite operators have exercised their statutory option by declining to accept. Counsel have advised that these statutes are unconstitutional and the trial court has so held in the case of the "Kohler" act. An appeal to the Supreme Court on the part of the State is anticipated.

As stated in the report for last year, the wages of the employees of the anthracite industry were fixed at approximately seventeen per cent above the war-level until March 31, 1922, by a contract, resulting from an award made by the Anthracite Coal Commission, appointed by the President of the United States, and this contract bound the operators until the agreed date of its expiration. Negotiations for a new contract, to take effect on April 1, 1922, are now in progress and the outcome cannot be predicted. The employees have demanded an increase of twenty per cent over the war rates of wages and numerous changes in conditions of employment that would further increase the labor cost of anthracite. The operators consider that some reduction in wages, corresponding at least with the admitted reduction in the cost of living, should be made and the anthracite industry thus brought reasonably in line with the other great industries of the nation, all which are as rapidly as possible adjusting themselves to the conditions of peace, and thus protected in its market position against the competition of bituminous coal.

## RAILROAD DEPARTMENT.

This is the first annual report since that for the year 1917 to cover a full year's operation of your railway for your corporate account. During the intervening years your property was for twenty-six months, ending with February 29, 1920, operated by the United States Railroad Administration and from March 1, 1920, to August 31, 1920, inclusive, its revenues were guaranteed under the Transportation Act of 1920.

During this first year of operation for your corporate account the gross operating revenues of your railway amounted to \$45,776,859, which is \$422,561 or 0.93 per cent more than those resulting from the operations of 1920. Operating expenses amounted to \$38,825,529, a decrease from 1920 of \$3,300,801, or 7.84 per cent. The resulting operating income, before deduction of taxes, was \$6,951,330, an increase of \$3,723,361 or 115.35 per cent, as compared with 1920. The corresponding averages for the three years from July 1, 1914, to June 30, 1917, the "test period" adopted by Congress as the basis of compensation for possession and use of the property during Federal Control are: operating revenues, \$25,474,213; operating expenses, \$17,568,694; operating income, prior to taxes, \$7,905,519. These comparisons show that the increase in gross revenues has been more



than absorbed by increases in operating expenses, due to advances in the prices of materials, changes in working conditions and increases in wages, so that while considerably more money has passed through the accounts of your railway, in the net result its actual earnings have been less than upon the lower gross receipts of the pre-war period.

Freight receipts during the year exceeded those of 1920 by \$422,304, or 1.08 per cent, although the total freight movement declined 24.90 per cent from 4,265,734,874 ton-miles in the earlier to 3,203,759,305 in the later year. Compared with the revenues of the test period, freight receipts increased 87.47 per cent and freight movement declined somewhat less than one per cent. The average rate per ton per mile, in 1921, was 1.236 cents. The decrease in freight movement is wholly attributable to the prevailing industrial depression and was most marked in respect of bituminous coal, iron ore and its products, clay, gravel, sandstone, pulp-wood, lumber and general manufactures and merchandise.

Passenger receipts exceeded 1920 by \$259,287.09 or 6.88 per cent. The total movement of passengers was 119,696,843 passenger-miles as against 130,971,551 passenger-miles in 1920, a decrease of 8.61 per cent. Passenger-train mileage was 1.33 per cent less than in 1920, but passenger-car miles increased by a fractional per cent. Per mile traveled the average passenger paid 3.37 cents in 1921, as compared with 2.88 in 1920. Gross receipts per passenger-train mile averaged \$1.72 in 1921, and \$1.58 in 1920, an increase of 8.86 per cent. The average per passenger-car mile was 6.84 per cent greater in 1921 than in 1920.

Receipts for mail transportation amounted to \$235,596, an apparent decrease of \$131,754 or 35.87 per cent, but substantially all this is accounted for by the fact that the figure for 1920 includes \$130,000 received in adjustment for under-payments in prior years.

Miscellaneous revenue decreased 12.05 per cent, principally on account of the general business depression.

The increased passenger and freight rates authorized by the Interstate Commerce Commission in 1920, pursuant to the new requirements of the Transportation Act, took effect on August 26, 1920, and were in force throughout the whole of 1921. This accounts for the increase in revenues that have been noted. Reductions in operating expenses resulted from somewhat more favorable prices for materials and supplies, adjustments in wages and conditions of employment and closer approximation to normal operating conditions as the abnormalities of war and Federal Control become more remote. General expenses decreased \$11,334, or three-fifths of one per cent. Maintenance of way expenditures increased \$395,082, or 7.72 per cent over 1920. The application of 2,866 tons more rails and 112,418 more ties than were applied in the maintenance of 1920 are represented by an increase in these two items of \$806,505, and increases in the application of other track materials and in maintenance of interlockers and signals added \$322,063, but these increases were largely offset by reductions in other items. Maintenance of equipment charges increased \$64,216, or one-half of one per cent over 1920, this being a net figure representing numerous items both of increase and reduction; an increase of \$757,757 represents retirements of freight-train cars. Traffic expenses increased \$107,177, or 27.73 per cent, chiefly on account of the re-establishment of traffic agencies for the development of business which had been abolished under Federal Control. The reduction of \$3,789,245, or 17.49 per cent in transportation expenses is explained by the reduced public demand for transportation with its entailed expense, adjustments in wages and improved operation. The factor last indicated is illustrated by increases in the gross freight-train loads northbound, in the heavy tonnage districts. The average gross freight-train load from Carbondale was 3,765 tons, an increase of 486 tons, or 12.9 per cent, and from Oneonta it was 3,601 tons, an increase of 413 tons, or 11.5 per cent. The average delay to cars passing through yards was reduced from 11 hours and 42 minutes in 1920, to 8 hours and 35 minutes in 1921, or 26.5 per cent.

On June 25, 1921, the Railroad Labor Board ordered certain reductions in wages to take effect on July 1, 1921. The resulting saving to your company during the last six months of 1921, was \$1,030,000, or 8.77 per cent of its total expenditures in wages. This is but a fraction of the amount paid out by reason of the advances required by the same authority on July 20, 1920, the increase then ordered having augmented your expenditures for wages approximately twenty-one per cent. The Railroad Labor Board has also made some revision and several consolidations of rules affecting working conditions, but without very materially mitigating the severely restrictive and grossly extravagant rules that resulted from unilateral negotiations during Federal Control. Extravagant estimates of the savings permitted by these changes in the form rather than the substance of the working rules have been widely circulated, but these potentialities are far more evident in the daily press than they are possible of realization in railway practice—the sole point at which they could benefit the railway industry or the public.

The Transportation Act of 1920 required the Interstate Commerce Commission to provide for a schedule of rates that would admit of a return of not less than five and one-half per cent or more than six per cent upon the fair value of the properties, from March 1, 1920, to February 28, 1922. The rate of return to be deemed reasonable and used as the basis of rates subsequent to the later date was left to determination by the Commission. An inquiry intended to supply information on which to establish the basic rate of return for the next period and covering the general level of railway rates and the relation of the existing body of rates to industrial and traffic conditions was begun by the Commission on December 14, 1921. Many witnesses, including shippers, representatives of State railroad commissions and railway officers, were heard and the inquiry has but recently been concluded. No announcement of the future policy of the Commission, in the matters covered by this investigation, has been made. Under existing rates, the railways of the nation, as a whole, earned in 1921 about half the income provided for by the Transportation Act upon a valuation absurdly below the real value as compared with other properties. If the railways are to be required to write off the deficiency as a permanent loss and to accept a lower average return than that earned by investments in United States bonds, they will not, while taxes, wages and operating expenses continue at the present levels, be able to obtain the additional capital needed for their expansion.

The proceeding brought by the principal New England railroads, except the Boston and Albany as noted in the report for last year, against their connections, including your company, and substantially all carriers in the country, have resulted in litigation to set aside an order by which the Interstate Commerce Commission undertook to increase the annual revenues of the New England railroads by about \$7,500,000, to be diverted from the earnings of other railways by means of modifications in the bases used in dividing the through charges collected in respect of freight interchanged between New England and other sections of the country. This order was entered as of January 30, 1922, and made to take effect on March 1, 1922; but the effective date has been changed, by amendment, to April 1, 1922. On July 6, 1921, the first decision in this proceeding was rendered by the Commission, a majority holding that the New England railroads had not established their complaint and refusing to grant the relief asked, although recommending to the carriers in interest a general revision of the divisions, which were considered as inconsistent and in

some cases to be unfair to one side, while in others unfair to the other side. Committees were appointed to undertake these revisions, as suggested by the Commission, but before these committees had been in existence long enough to present any definite results, certain changes in the personnel of the Commission took place and were followed by the filing, on behalf of the New England railroads, of a petition for a re-argument. This re-argument was granted and, with no addition to, or change of any kind in, the record of testimony, the Commission, again by a majority and by a majority that included all the members appointed after the earlier decision, reversed its former conclusion and decided that the New England complainants had established their right to the relief sought. The order issued in accordance with this second opinion required the defendants to shrink their division by fifteen per cent of the present divisions accruing to complainants, in cases in which the complainants now receive not more than half the total charge, and by fifteen per cent of their own present divisions, in cases in which the existing contracts allow more than one-half of the total charge to the complainants. From this result, Commissioners Hall, Daniels and Esch (the latter, as a member of Congress and Chairman of the Committee on Interstate and Foreign Commerce of the House of Representatives having been most influential in determining the character of the present law under which the Commission acts) dissented. Upon advice of counsel your company has joined the defendant carriers in a suit, instituted in the District Court of the United States for the Southern District of New York, to set aside this order and enjoin its enforcement. The hearing upon the motion for an interlocutory injunction has been set for April 22, 1922.

#### FEDERAL VALUATION

Preliminary statements of proposed reports to the Commission concerning the valuation of your lands and structures were furnished to your officers during 1920 and exceptions were filed with the Bureau of Valuation covering necessary corrections of errors and in unit prices. Subsequently, a preliminary accounting report was received and examined by your Accounting Department, this examination disclosing numerous errors and omissions which were also covered by exceptions. No formal action has been taken by the Commission with regard to these exceptions, although through conferences with representatives of your Valuation and Accounting departments and representatives of the Bureau of Valuation many corrections in the Land and Accounting reports have been admitted. As a result of these conferences it is expected that the Tentative Valuation will be substantially more accurate and favorable to your company than the original compilations. No opportunity has been afforded for conferences concerning the exceptions to the engineering report, although they have been in the hands of the Bureau of Valuation since February 1, 1921. The cost of valuation work to the end of 1921, amounted to \$563,532.98, of which \$426,961.38 was charged to corporate operating expenses and \$136,571.60 to the operating expenses of the Railroad Administration.

#### INDUSTRIAL DEPARTMENT

Ninety-four new industries were located on the tracks of your company during 1921, as compared with 115 in 1920. Thirty extensions to old industries and twenty-five industrial side tracks were constructed and five industrial side tracks were extended. The corresponding numbers for 1920 were sixty-three, twenty and eight. The cost of new industrial side tracks and of extensions to such tracks in 1921, was \$95,620, of which \$18,524 was borne by your company and \$77,096 by the industries served. Farm Bureau organizations are maintained in all the counties traversed by your railway and representatives of your industrial department have continued to work with them and with all other Federal, State and co-operative agencies which are endeavoring to promote agricultural progress in the regions adjacent to your line. Efforts to advance the work of local commercial organizations have also been continued.

#### ALLIED TROLLEY LINES

The Union Traction Company strike which began on January 29, 1921, as stated in the last annual report resulted, as was anticipated, in serious loss of revenues and in extraordinary additions to the expense of operating per unit. Additional revenue losses resulted from the illegal operation of "jitneys" which affected every street-railway route and the failure of the public authorities to maintain the public peace. The strike was formally abandoned on November 24, 1921, although it was practically at an end long before that date, and the subsequent resumption of the use of these lines by the general public has been rapid, so that traffic is now nearly at the normal level. Continuous efforts by the legal department of this company have greatly reduced the competition of illegally operated motor vehicles. No difficulty has been experienced in obtaining a sufficient number of qualified men to operate the cars at the rates of wages fixed when the former Public Service Commission for the Second District declined to authorize the rates of fare necessary to support the rates of wages then in force and took its position in favor of liquidation of wages, saying in part:

"... the Commission ... in the order about to be made ... is dealing with wages of the employees. ... It ... seems clear that they cannot remain at the present point when the general cost list is receding. ... we must assume ... that the trend of wages will be downward."

The services supplied by the United Traction Company can be most satisfactorily rendered by one-man cars, the design and operation of which have been admirably developed to meet the requirements of surface transit in urban communities. The first car of this type was put in service during June, 1921; about ninety such cars are now in use in Albany and Troy and by July 1, 1922, it is expected that this type of equipment will be in operation for all regular basic schedules, possibly excepting the lines between Albany and Troy and between Albany and Cohoes.

Since January 28, 1921, under the order of the former Public Service Commission, this company has received eight cents as its standard fare (four tickets being sold for thirty cents) in Albany and but six cents in Troy, Watervliet, Cohoes, Green Island, Waterford and Colonie and five in Rensselaer. This discrimination was considered by the former State authority to be required by the then-existing law. A statutory change having been made, by which the new Commission is empowered to authorize reasonable rates in such cases, application for an equalization of rates was presented to the Commission early in November, 1921. Testimony was taken and the case submitted upon briefs, and it is now awaiting decision. With properly equalized fares, one-man cars and the improved operation now possible, the income account of this property should become substantially more favorable.

The operating revenues of the Hudson Valley-Railway Company amounted to \$970,779, operating expenses to \$921,320, taxes to \$64,066 and the net operating deficit to \$14,607. The data show a decrease in operating revenues of 11.67 per cent and in operating expenses of 6.65 per cent

with an increase in taxes of 16.43 per cent and a decrease in net operating income of 125.60 per cent. Operating revenues were considerably reduced by the strike on the United Traction Company, as the employees refused to operate cars south of Waterford and into Troy from January 29 to August 17, 1921. By reductions made in October and November, 1921, and in January, 1922, the wages paid by this company were equalized with those paid by the United Traction Company.

On August 9, 1921, the Public Service Commission allowed an increased fare on the interurban lines, representing an increase of one cent in each zone on the Glens Falls and Waterford divisions, with the exception of the line between Mechanicville and Waterford. The urban fares in Glens Falls, Hudson Falls, Fort Edward and Saratoga remain the same as formerly, that is, seven cents. Full benefit from the new rates has not been obtained on account of labor troubles in and near Glens Falls and Fort Edward, the employees of the International Paper Company and other companies having been on strike since early last spring.

#### GENERAL REMARKS

The serious business depression existing at the date of the report for last year was not relieved during 1921. The movement of prices toward lower levels continued, with some interruptions and exceptions, and there were some re-adjustments in wages, but in this field the movement was sporadic and commonly insufficient. Revision of Federal taxation, the proclaimed object of which was the relief of industry, raised the tax on corporate income twenty-five per cent, from the rate of ten to that of twelve and one-half per cent of the taxable income, while the slight mitigation of the surtax rates on individual incomes has not materi-

ally reduced the advantage of tax-free securities compared with those that can be issued by railways and other privately-owned enterprises. The elimination of taxes on so-called excess-profits has, of course, had no beneficial effect upon railways and other industries subject to public regulation. The Transportation Act of 1920, extravagantly heralded as the great charter of an era of reconciliation between the purpose of a reformed regulatory system and the inescapable requirements of efficient industry, has failed to provide the railways with the adequate revenues recognized on all sides as necessary to restore confidence on the part of investors. Under these conditions the rate of interest has declined, not because of an abundant supply of investment capital, measured by the opportunities for its utilization in desirable expansion of productive enterprise, but because of a general absence of confidence that such expansion is commercially warranted. With the capital invested in existing enterprises as idle as cars lying empty on railway side tracks and in their yards, and labor largely idle, because of lack of demand for the products of their employment at prices sufficient to pay wages and for raw materials, there is little incentive to seek capital for new undertakings or to apply it in the expansion of those already in existence. While in a country so rich in natural resources, industry will develop recurrent periods of more or less satisfactory activity, the sources of genuine improvement are more profound than any yet invoked. They suggest a clear recognition of the great truths that industry and prosperity are inseparable and that enterprise to be productive in any maximum degree must be unshackled.

By order of the Board of Managers,

L. F. LOREE,

President.

[ADVERTISEMENT]

(Continued from page 1147)

The revenues and expenses in detail and the principal traffic statistics for 1921 compare as follows:

	1921	1920
Operating revenues:		
Freight .....	\$3,076,756	\$2,984,251
Passenger .....	50,132	52,240
Milk .....	88,722	72,531
Total, including other .....	\$3,242,291	\$3,146,209
Operating expenses:		
Maintenance of way and structures .....	\$381,911	\$394,109
Maintenance of equipment .....	607,376	607,442
Traffic expenses .....	21,328	23,711
Transportation .....	1,326,640	1,651,475
General .....	92,587	98,325
Total .....	\$2,429,843	\$2,775,062
Net revenue from railway operation .....	\$812,448	\$371,147
Freight traffic:		
Miles operated .....	97	97
Number of revenue tons .....	4,639,163	5,927,454
Number of revenue tons one mile .....	321,459,650	409,680,013
Average distance each ton carried—miles .....	69.3	69.2
Average revenue per ton .....	\$6.66	\$5.50
Passenger traffic:		
Miles operated passenger service .....	87	88
Number of passengers .....	121,600	140,984
Number of passengers one mile .....	1,463,147	1,705,329
Average distance each passenger carried—miles .....	12.0	11.7
Average revenue per passenger per mile .....	\$4.1	\$3.7

LEHIGH & NEW ENGLAND.—*Annual Report.*—The comparative income account for the years ended December 31, 1921 and 1920, follows:

	1921	1920*
Railway operating revenues:		
Anthracite coal .....	\$2,410,883	\$2,659,033
Bituminous coal .....	721,487	479,701
Merchandise .....	1,443,775	1,478,193
Passenger .....	25,241	23,572
Total, including other .....	4,775,737	4,820,406
Railway operating expenses:		
Maintenance of way and structures .....	734,885	789,497
Maintenance of equipment .....	1,169,865	1,048,207
Traffic .....	80,160	70,381
Transportation .....	1,617,195	1,836,042
General .....	193,984	179,466
Total railway operating expenses .....	3,795,741	3,921,144
Net revenue from railway operations .....	979,997	899,262
Railway tax accruals .....	226,437	227,775
Total railway operating income .....	753,560	671,487
Total non-operating income .....	364,610	609,739
Gross income .....	1,118,170	1,281,226
Interest on funded debt .....	316,413	325,638
Total deductions from gross income .....	415,765	415,701
Net income .....	702,405	865,526
Income applied to sinking and other reserve funds .....	6,489	3,053
Less federal income for 1920 .....		18,776
Balance transferred to profit and loss .....	695,916	843,698

\*Federal and company operations for the year 1920 are combined in this statement.

The principal freight statistics for the year ended December 31, 1921, compare as follows:

	1921	1920
Average mileage operated .....	238	237
Total revenue tonnage .....	5,943,780	6,881,496
Average ton-miles revenue freight per mile of road .....	1,066,194	1,082,624
Ton-miles revenue freight per train-mile .....	589	560
Ton-miles revenue freight per loaded freight car-mile .....	45.51	43.77
Miles hauled—revenue freight .....	42.65	37.25
Average revenue per ton-mile of freight (cents) .....	1.81	1.80

MICHIGAN CENTRAL.—*New Director.*—Warren S. Hayden has been elected a director to succeed T. A. Harden, deceased.

MIDLAND VALLEY.—*Authorized to Issue Bonds.*—This company has been authorized by the Interstate Commerce Commission to issue \$541,000 of first mortgage 5 per cent gold bonds to be sold at not less than 75 or to be pledged as security for short term notes.

MINNEAPOLIS & ST. LOUIS.—*Annual Report.*—The annual report issued this week shows the following corporate income for the year 1921:

	1921	1920
Gross .....	\$16,185,129	\$14,352,998
Expenses, taxes, etc. ....	15,541,011	15,491,931
Operating income .....	\$644,118	*\$1,138,933
Standard return .....		451,438
Government guaranty .....		3,362,818
Other income .....	*171,426	241,549
Total income .....	\$472,692	\$2,916,872
Interest, etc. ....	2,308,914	2,316,696
Deficit .....	\$1,836,222	†\$600,176

\*Deficit. †Surplus.

MINERAL RANGE.—*Annual Report.*—The income account for the year ended December 31, 1921, compares as follows:

	1921	1920
Operating revenues .....	\$281,735	\$562,590
Operating expenses .....	407,495	717,801
Net operating deficit .....	125,760	155,212
Railway tax accruals .....	60,309	43,336
Operating deficit .....	186,091	198,570
Total non-operating income .....	21,526	249,363
Gross income .....	Def. 164,565	50,793
Total deductions from gross income .....	87,374	90,047
Net deficit .....	251,939	39,253

MISSOURI & NORTH ARKANSAS.—*Authorized to Issue Securities.*—The Interstate Commerce Commission has authorized the Missouri & North Arkansas Railway to issue \$3,000,000 of common stock for the purpose of taking over the Missouri & North Arkansas Railroad and also a \$5,000,000 first mortgage 15-year gold bond to be pledged with the Secretary of the Treasury as collateral security for a loan of \$3,500,000.

MISSOURI PACIFIC.—*Annual Report.*—The annual report issued this week shows a corporate income account for the year ended December 31, 1921, as follows:

	1921	1920
Operating revenues .....	\$109,785,950	\$98,194,271
Operating expenses .....	91,693,856	94,909,599
Net from railway operations .....	18,092,094	3,284,672
Railway taxes and uncollectible railway revenue ..	4,396,529	3,820,709
Railway operating income .....	13,695,565	Def. 536,036
Other operating income .....	799,174	660,230
Total operating income .....	14,494,739	124,194
Deductions from operating income .....	4,257,891	4,741,202
Net railway operating income .....	10,236,848	Def. 4,617,009
Non-operating income .....	3,061,557	1,274,902
Compensation accrued (standard return) .....		1,872,101
Government guaranty .....	1,972,081	15,638,829
Gross income .....	15,270,487	14,168,823
Deductions from gross income .....	11,733,471	11,135,748
Balance—net income .....	\$3,537,016	\$3,033,075

NATIONAL LINE.—*Certificate to Construct Line Declined.*—The Interstate Commerce Commission has declined to issue a certificate authorizing this company to construct a 12-mile railroad from a point on the Columbus & Greenville in Webster County, Miss., paralleling the main line of the Gulf, Mobile & Northern. It



is stated that the record indicates that applicant has not given sufficient attention to an estimate of construction costs and of operating expenses and has estimated revenues erroneously.

**NEW YORK, CHICAGO & ST. LOUIS.—Annual Report.**—The annual report issued this week shows the following corporate income account for the year ended December 31, 1921:

	1921	1920
Operating revenues	\$27,030,663	\$23,953,824
Operating expenses	20,613,594	19,112,850
Net from railway operations	6,417,069	4,840,974
Railway tax accruals	1,820,862	1,020,000
Railway operating income	4,592,716	3,816,117
Total non-operating income	3,962,030	691,357
Gross income	8,554,745	4,507,474
Interest on funded debt	1,623,492	1,640,640
Miscellaneous income charges	2,191,491	92,408
Total deductions	4,232,041	2,258,623
Net income	4,322,705	2,248,851
Total sinking fund and dividend appropriations	1,597,555	1,597,966
Income balance	2,725,149	650,885

**NORFOLK SOUTHERN.—Annual Report.**—The annual report issued this week shows the following income account for the year ended December 31, 1921:

	1921	1920*
Operating revenues	\$8,056,795	\$6,610,402
Operating expenses	6,752,509	6,959,365
Net railway operating income	1,304,286	Def. 348,963
Railway tax accruals	366,095	219,416
Railway operating income	937,852	Def. 569,079
Total non-operating income	106,882	Def. 1,684,258†
Gross income	1,020,259	Def. 1,115,178
Total deductions	1,343,933	1,168,739
Net income	Def. 323,674	Def. 53,561
Profit and loss account:		
Net credit for the year from redemption of bonds, sale of securities owned, etc.	313,953	273,729
Net result for the year	Def. 9,720	220,168

\*Under government control two months, and operated by owners balance of year.

†Includes rental and operating deficit paid by government on account of operations during guaranty period.

**NORFOLK & WESTERN.—Asks Authority to Guarantee Equipment Trust Certificates.**—This company has applied to the Interstate Commerce Commission for authority to guarantee \$6,700,000 of ten-year, 5½ per cent equipment trust certificates to be issued by the Virginia Holding Company for equipment to be leased to the Norfolk & Western. The certificates are to be sold at 97.75.

**NORTHERN PACIFIC.—Authorized to Issue Bonds.**—The Interstate Commerce Commission has authorized an issue of \$115,534,300 of refunding and improvement mortgage bonds, 5 per cent, to be sold at not less than 90 and the proceeds used to redeem at 103½ outstanding joint 6½ per cent bonds of the Northern Pacific and the Great Northern.

**PERE MARQUETTE.—Asks Authority to Abandon Branches.**—This company has applied to the Interstate Commerce Commission for authority to abandon its Remus and Mecosta branches, 13.38

and 11.23 miles, respectively, in Mecosta County, Mich., on the ground that the traffic is insufficient.

**PITTSBURGH & WEST VIRGINIA.—Annual Report.**—The income account for the year ended December 31, 1921, compares as follows:

	*1921	1920
Operating revenues	\$2,808,939	\$2,254,048
Operating expenses	3,660,192†	2,273,966
Net revenue from railway operations	Def. 851,252	Def. 19,919
Railway tax accruals	321,891	169,322
Total operating income	Def. 1,173,230	Def. 190,367
Total non-operating income	2,185,612	661,123
Gross income	1,012,382	470,755
Total deductions from gross income	62,384	37,076
Net income	949,998	433,679
Dividend appropriations of income	544,242	433,679
Income balance	405,756	.....

\*Includes operating results of West Side Belt Railroad.

†Includes \$810,917 for rehabilitation of road and equipment.

**SHREVEPORT & NORTH EASTERN.—Certificate for Construction Denied.**—The Interstate Commerce Commission has denied this company's application for a certificate authorizing the construction of a line from Minden, La., to a point near Junction City on the Arkansas state line, 36 miles, on the ground that the facts presented are not sufficient to enable it to form a reasonably accurate judgment of the possibilities of the proposed line or to indicate a reasonable prospect of success for the enterprise.

**ST. LOUIS-SAN FRANCISCO.—New Directors.**—B. F. Yoakum, of San Antonio, Texas, and A. G. Becker, of Chicago, have been elected directors to succeed Lorezo Semple and T. D. Heed.

**TEXAS MIDLAND.—Guaranty Certified.**—The Interstate Commerce Commission has certified the amount of this company's guaranty for the six months period of 1920 as \$158,367, of which \$58,367 was still to be paid.

### Railroad Administration Settlements

The United States Railroad Administration has this week announced final settlements for the federal control period with the Winston-Salem Southbound to which it paid \$72,000 and with the Missouri & North Arkansas which paid director general \$292,000.

### Trend of Railway Stock and Bonds Prices

	May 9	Last Week	Last Year
Average price of 20 representative railway stocks	64.95	65.26	57.41
Average price of 20 representative railway bonds	86.07	86.58	74.89



Lethbridge Viaduct on the Canadian Pacific

## Railway Officers

### Executive

**William A. Colston**, whose election as vice-president and general counsel of the New York, Chicago & St. Louis, with headquarters at Cleveland, Ohio, effective May 1, was reported in the *Railway Age* of April 8, and whose sketch of his railway experience was published in the issue of May 6, has also been elected a director of this company, effective May 3, and vice-president and general counsel and a director of the Lake Erie & Western and a director of the Fort Wayne, Cincinnati & Louisville, effective May 10.

**James B. Sheean**, who was elected vice-president and general counsel of the Chicago & North Western and the Chicago, St. Paul, Minneapolis & Omaha, effective April 18, with headquarters at Chicago, was born in Anamosa, Iowa, August 24, 1863, attended Beloit College from 1881 to 1883, was graduated from the University of Michigan in 1885, and was admitted to the bar in 1888. Thereafter he engaged in general law practice at Omaha, Neb., until September 1, 1892, when he entered railway service as an attorney for the Fremont, Elkhorn & Missouri Valley (now a part of the Chicago & North Western) at Omaha, Neb. On February 28, 1903, he was appointed assistant general attorney of the Chicago & North Western, with headquarters at Omaha, and continued in this capacity until March 1, 1905, when he became general attorney of the Chicago, St. Paul, Minneapolis & Omaha, with headquarters at St. Paul, Minn. On March 1, 1910, he was promoted to general solicitor of that company and on October 1, 1918, was elected general counsel of both the Chicago, St. Paul, Minneapolis & Omaha, and the Chicago & North Western, with headquarters at Chicago, which position he held until his recent election to vice-president and general counsel of these companies.



J. B. Sheean

### Financial, Legal and Accounting

**J. F. Fairlamb** has been appointed auditor of revenue of the New York Central and the Ottawa & New York, succeeding **W. T. McCulloch**, deceased. **J. S. Conover** and **J. McKendrick** have been appointed assistant auditors of revenue. These changes were effective May 1. The office of auditor of miscellaneous accounts has been discontinued and jurisdiction over its affairs has been assumed by auditor of revenue.

### Operating

**Charles F. Thomas** has been promoted to superintendent in charge of traffic and operation of the Nezperce & Idaho, with headquarters at Nezperce, Idaho, to succeed **J. M. Mitchell**, resigned.

### Traffic

**P. M. Snyder** has been appointed division passenger agent of the Buffalo, Rochester & Pittsburgh with headquarters at Pittsburgh, Pa.

**H. D. Guy** has been appointed commercial agent of the Norfolk & Western with headquarters at Roanoke, Va., effective April 24.

**P. W. Clarkin** has been appointed division freight agent of the Canadian National with headquarters at Charlottetown, P. E. I., succeeding **A. McDonald**, retired.

**G. W. Curtis** has been appointed industrial commissioner of the Canadian Pacific, Eastern Lines, with headquarters at Montreal, succeeding **H. P. Timmerman**, retired.

**C. S. Blackman** has been promoted to general freight agent of the Tennessee Central, with headquarters at Nashville, Tenn., effective May 4, to succeed **M. E. Newell**, promoted to the newly created position of freight traffic manager. Effective the same date, **J. A. McNeill**, has been promoted to the newly created position of assistant freight traffic manager, with headquarters at Nashville, Tenn.

### Engineering, Maintenance of Way and Signaling

**H. A. Hampton**, assistant division engineer of the Portland division of the Southern Pacific, with headquarters at Portland, Ore., was promoted to division engineer, with the same headquarters, effective May 1, to succeed **E. E. Mayo**, who has been transferred to Sacramento, Cal., to succeed **F. M. Siefer**.

**Clarence U. Smith**, whose promotion to district engineer of the Chicago, Milwaukee & St. Paul, with headquarters at Milwaukee, Wis., effective May 1, was reported in the *Railway Age* of April 29 (page 1046), was born at Philadelphia on June 20, 1883, and was graduated from Armour Institute of Technology, Chicago, in 1907. He entered railway service in June, 1907, as an instrumentman on location on the Chicago, Milwaukee & St. Paul at Taft, Mont., in the Bitter Root mountains. For the next seven years he served consecutively as instrumentman on location, as engineer in charge of concrete work on several bridge and terminal projects on the Pacific Coast extension, as resident engineer on the Cannon Ball River line in South Dakota, and on double track work in Minnesota. He was promoted to assistant engineer in charge of concrete work on the Middle district with headquarters at Milwaukee in 1914. In 1917 he entered military service as a captain in the 107th Engineers, 32nd Division, with which he served throughout the operations of this division overseas, until his discharge in May, 1919, when he returned to the Chicago, Milwaukee & St. Paul, as assistant engineer on the Middle district, where he remained until December, 1920, when he was promoted to assistant engineer of the Chicago and Milwaukee and the Northern divisions, the position he held at the time of his recent promotion.



C. U. Smith

### Purchasing and Stores

**G. H. Pinion** has been appointed purchasing agent of the Trans-Mississippi Terminal with headquarters at Dallas, Texas, succeeding **L. M. Sullivan**, deceased.

### Obituary

**William B. Sears**, one of the builders of the Flint & Pere Marquette, now a part of the Pere Marquette System, died at Saginaw, Mich., May 2, at the age of 90 years.